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Reorganization to be Considered Paper Week

President Everest Declares Forthcoming Annual Business Meeting of American Paper and Pulp Association Will Be of Unusual Importance—Committee On Development's Recommendations Covering Further Co-ordination of Co-operative Activities of the Industry to be Discussed—New By-Laws to be Proposed

D. C. Everest, president of the American Paper and Pulp Association, has sent out the following message to the members, emphasizing the vital importance of the forthcoming annual business meeting:

"History repeats itself. Today the American paper industry finds itself in a position which is analogous to that existing after the Civil War. Then, after having shaken off the demoralization caused by the war, the industry enjoyed a brief period of prosperity. Prices increased; new mills sprang up; the industry flourished. But this prosperity was shortlived. It gave way to a period of intense competition and narrowed profits.

"Now, since the World War, this history has been repeated. The slack has been taken up and the industry is again expanding; but our mills are being subjected to the most intense competition, a competition which involves the industry as a whole in its relation to other industries. This unusual combination of expansion and intense competition has brought grave responsibilities to the leaders of the industry.

"How have the leaders of the association used the responsibility of leadership entrusted to them? Will their policies meet the needs of this modern competition? Is the industry making it possible for the association's leaders to proect it and promote its interests?

"Member mills are the association's stockholders; its officers, the board of directors. The association belongs to the industry and the industry has every right to know how its association's affairs are being administered and what its officers' plans for the future are.

"This year's meeting is important! The annual meeting this year is of unusual importance as regards the association's future work for the industry. Proposed new by-laws and a new method of financing the association will be considered and, most important of all, the executive committee hopes to present for discussion at this meeting the results of the association's Committee on Development's recommendations covering further coordination of the cooperative activities of the industry.

"I would therefore urge that every member mill be represented by an officer qualified to indicate his company's position in these matters as presented for discussion at the Association's 52nd Annual meeting in the Astor Gallery of the Waldorf-Astoria Hotel on Thursday, February 21, 1929."

The program of the 52nd Annual Meeting of the American Paper and Pulp Association, follows:

MORNING SESSION

10:30 Call to Order
10:35 Minutes of Fifth-first Annual Meeting
10:40 Secretary-Treasurer's Annual Report
10:50 Appointment of Nominating Committee
11:00 Standing Committee Reports.
11:30 President's Address
12:00 Report of Commitee on Development
1:00 Adjournment until 2:30

AFTERNOON SESSION

2:30 Report of Resolutions Committee
2:45 Future Possibilities in the Utilization of Cellulose, Dr. Charles H. Herty, Chemical Foundation, Inc.
3:15 Trade Practice Conferences, Judge William E. Humphrey, Federal Trade Commission
4:00 Report of Nominating Committee
4:15 Unfinished and New Business
4:30 Adjournment

FIFTY-SECOND ANNUAL BANQUET

Toastmaster—President D. C. Everest; Speakers: Sir John Edmiston, "Senator" Edward Ford and Rev. Dr. Nehemiah Boynton.
7:00 Reception .....Astor Gallery
7:30 Banquet .....Grand Ball Room

TARIFF COMMITTEE

Milton E. Marcuse, Chairman, Bedford Pulp and Paper Company, Richmond, Va.

COMMITTEE ON STATISTICS

C. B. Morgan, Chairman, S. D. Warren Company, 101 Milk street, Boston, Mass.

COMMITTEE ON SIMPLIFICATION AND STANDARDIZATION

S. L. Wilson, Chairman, American Writing Paper Company, Holyoke, Mass.

SUB-COMMITTEE, NATIONAL COMMITTEE ON WOOD UTILIZATION

Reuben B. Robertson, Chairman, Champion Fibre Company, Canton, N. C.

ADVISORY COMMITTEE TO U. S. DEPARTMENT OF AGRICULTURE

George W. Sisson, Jr., Chairman, Racquette River Paper Company, Potsdam, N. Y.

ADVISORY COMMITTEE TO U. S. DEPARTMENT OF COMMERCE

Norman W. Wilson, Chairman, Hammerill Paper Company, Erie, Pa.

ADVISORY COMMITTEE TO U. S. BUREAU OF STANDARDS

Ernst Mahler, Chairman, Kimberly-Clark Co., Neenah, Wis.

(Continued on page 48)

Hearings Are Held on the Schall Resolution

Measure Asks for the Appointment of A Committee of Five Members of the Senate to Investigate the Alleged Acquisition of American Newspapers by Foreign Paper Manufacturers and the Production of Paper From Waste Farm Products

[FROM OUR REGULAR CORRESPONDENT]

Washington, D. C., February 6, 1929.—Hearings were held last week by the Senate Committee on Agriculture, of which Senator McNary of Oregon, is chairman on the Schall resolution asking for the appointment of a committee of five members of the Senate to look into the alleged acquisition of American newspapers by foreign paper manufacturers and also to look into the production of paper from waste products of the farm.

Those Present at the Hearing

Those appearing included R. S. Kellogg, secretary of the News Print Service Bureau; Elisha Hanson, Washington representative of the American Newspaper Publishers Association; J. M. Ripley, editor of the American Press Association, New York City; Prof. O. R. Sweeney, of the State College of Agriculture, Ames, Iowa; and William L. Daley, Washington representative of the National Editorial Association.

Senator Schall Opens Hearing

A statement of Senator Schall opened the hearing in which various rumors relative to the alleged fixing of prices on news print paper were repeated as were the Hearst agreements on price with various news print mills. Reports of Montreal and New York meetings of news print manufacturers were also repeated and after Senator McNary had read telegrams from Marvin Pew and James W. Brown, of the *Editor & Publisher*, New York City, refusing to attend the hearings, Senator Schall intimated that they had stayed away from the hearings because of advertisements which they had recently received from the International Paper Company and others.

Mr. Ripley Repeats Many Rumors

Mr. Ripley told the committee that he is the editor of a monthly paper having a circulation of 7,000 and he repeated, not from first hand knowledge, many of the rumors and stories now being printed on the news print situation by newspapers and trade papers in various parts of the country. He admitted, under cross examination, that none of his evidence was first hand.

Mr. Ripley said that it seemed that more is transpiring behind the scenes in the news print situation than the news print manufacturers are prepared to admit. He dealt at some length with the meeting held in Copenhagen last year when the news print market of the world was supposed to have been distributed and he read into the record several stories on this subject.

He called the committee's attention to the fact that Canada exports a large percentage of the news print into the United States and that in 1929 there will be a large over-production in Canada, as much, he said, as 500,000 tons. He spoke of the various news print conferences which have been held the past few months in New York and Montreal and on cross examination again admitted that his information, in no case, was first hand.

A. R. Graustein Denies Reports

A letter was read into the record by Senator McNary from president A. R. Graustein of the International Paper Company dealing directly with the resolution in which he denied knowing of any paper manufacturer outside of the United States trying to control the newspapers of this country.

Prof. Sweeney told the committee of some of the experiments that have been made with corn stalk paper and said that the experiments are now being worked out commercially. He said that corn stalk paper is now being used to a considerable extent by both newspapers and magazines. At this time, he said, it cannot be produced to compete with news print paper made of pulp. The paper made of corn stalks must be blended, he told the committee, 65 per cent to 35 per cent wood pulp. Later, he thought, it may be blended with straw. The blend, he told the committee, makes it more opaque.

The yield of the paper is not so high as with wood pulp, said Prof. Sweeney, but he called attention to the fact that the corn stalks are very much cheaper than the wood. He said also that he thought that sugar cane waste can be used for the manufacture of paper.

If paper can eventually be made commercially from corn stalks, said Prof. Sweeney, it will help the farmer make some money and will also save the forests of the country. The government has not yet experimented enough along this line he said.

R. S. Kellogg Says Resolution is a Joke

Mr. Kellogg told the committee that he thought that the Schall resolution was a "joke." He denied that there is any news print monopoly and said that there is no agreement between Canadian and American manufacturers. All of the talk is simply gossip and hearsay, he said.

Mr. Kellogg told the committee that the small publishers get the same price as the large publishers on roll paper whether they buy 100 or 10,000 tons. Some of the contracts, he said, run over a period of years. There is now the greatest supply of paper in sight, Mr. Kellogg testified, that there has ever been and he called attention to the fact that the publishers of the country are now getting news print cheaper than they have for many years.

Resolution is all Popycock

Elisha Hanson told the committee that the Schall resolution is "all popycock." No group of paper manufacturers outside of the United States controls the news print market nor is any group of foreigners buying up newspapers in this country. His association, he said, is for a free news print market and it will oppose any duty being placed on news print paper in the tariff act, he said. The only thing that his association objects to, said Mr. Hanson, is any secret agreements between any news print manufacturers and any one publisher so that it will take the hide out of the other publishers.

Statement from J. C. Brimblecom

Mr. Daley said that his association favors the resolution and he read the following statement from J. C. Brimblecom, chairman of the legislative committee of his association.

"The National Editorial Association, representing the small daily and weekly newspapers in the United States, is vitally interested in the production and distribution of news print as it affects prices to the small consumers. The association is concerned with that feature of S. Res. 292, dealing with the proposed inquiry into the alleged news print monopoly.

"The agreement reported to have been reached between cer-

tain news print manufacturers and the publishers of larger daily newspapers does not benefit the smaller publishers, but has a contrary effect. In fact, nowhere in the negotiations between these groups has there been evidence that the welfare of the smaller newspapers in this country is considered. It is true, of course, that the larger daily newspapers with enormous circulations, consume an impressive percentage of the news print output. We have no quarrel with the arrangements under which the large publishers are in a position to take advantage of volume in obtaining long term contracts with the larger producers of news print. But, we are gravely concerned that the price warfare which preceded the final settlement between large producers and large consumers of news print may eventually react against the smaller consumers. Recognized trade authorities in the news print field, including the premiers of Canadian provinces, predict increases in the selling price of news print. The increased prices would be naturally applied to those not protected by contracts, that is, the smaller publishers.

"It would be folly for the smaller publishers to remain complacent when conditions forecast higher prices for news print. It would likewise be unwise for us to regard the immediate price stabilizaton as a criterion for the future.

"The smaller publishers' interest in this inquiry is based upon an experience of a few years ago when they were obliged to pay $180.00 a ton for news print paper. At that time the Senate directed the Federal Trade Commission to conduct an inquiry into news print prices. It is significant to note that the Commission was gravely concerned over the price discrimination then existing against the smaller publishers because they did not have the protection of contracts nor the financial resources of the larger publishers.

"The Department of Justice brought suit against some of the larger manufacturers of news print, many of whom are prominently identified with the present news print controversy. Then, as now, the smaller publishers were interested in having assurances, as consumers, of an adequate supply of news print at reasonable prices.

"Authorities on news print market conditions, including Canadian government officials and others in a position to know, are particularly emphasizing the high price trend. If predictions of interested parties are borne out, then the smaller publishers cannot depend upon the beneficence of news print combines. They must have legal protection, and the main purpose of the anti-trust law is protection to the consumers.

"In the event that your committee finds that conditions warrant an inquiry into various phases of news print production and distribution, this association feels that Congress will formulate a policy which will be fair and practicable."

60-Ton Pulp Mill for Reedsport, Ore.

Proposed construction of a reservoir midway between Reedsport and Clear Lake, Oregon, is the first step in resumption of plans to establish a 60-ton pulp mill in that city, according to announcement by Russell J. Hubbard, vice-president of the Winchester Bay Lumber Company. This company, which has operated almost continuously in Reedsport under the supervision of Mr. Hubbard since the construction of its plant there in 1919, is headed by John Kiernan.

Filings have already been made by the promoter on Neel Lake, and the water from this lake, Clear Lake and Edna Lake are to be turned into the proposed reservoir. Plans for the new pulp mill call for start of construction in early spring. A high grade of bleached pulp will constitute the output.

The site of the pulp mill adjoins the lumber plant of the company. The concern has large spruce and hemlock holdings which will supply material for operations over a long period of years. Their lumber plant now employs about 200 men and the payroll of the pulp mill will result in a big increase of employment.

Power Development on the Raquette River

[FROM OUR REGULAR CORRESPONDENT]

POTSDAM, N. Y., February 4, 1929.—The Power Corporation of New York, a subsidiary of the St. Regis Paper Company, has plans under way for development of hydro-electric power on the Raquette River near South Colton and, according to expectations, the project will be launched early in the spring. Paper manufacturing plants in this district controlled by the St. Regis Company will share in the benefits which will be derived with completion of the work and a considerable amount of hydro-electric energy will soon be available for manufacturing purposes. The development has been designed and will be carried out by the company's own forces and will be known as the South Colton development. The power site is located near South Colton about fourteen miles above this village. The job will be started as soon as weather permits. Considerable machinery must be moved to the site and it will be impossible to do this until the ground is clear of snow.

Plans of the company call for a concrete dam 50 feet high and 1,000 feet long and a power house of good sized proportions a short distance from South Colton. The power house will have one power unit capable of developing 12,800 horse power and it is planned to construct it so that approximately 38,400 units may be developed after better storage has been furnished on the river. It is proposed to have the project fully completed within a year's time. When all of the power owned by the Power Corporation in the eight mile stretch of the Raquette River at this point has been developed the firm will have available about 225,000 units of horse power for manufacturing and other purposes.

The power development at the new South Colton plant will be transmitted into the general system of the Power Corporation and the Northeastern Power Corporation, both of which are controlled by interests owning the St. Regis Paper Company. At this time only a small amount of power on the Raquette River has been developed. There is one large development at Higley which is under the control of the St. Lawrence Valley Power Corporation. It is expected that about 600 men will be employed on the new project when work is started in the spring.

Eagle Lodge To Ask for Increased Wage

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., February 4, 1929.—Eagle Lodge Papermakers has appointed a committee to prepare a request to the paper manufacturers asking for more wages and better working conditions generally. This committee is to prepare a plan, report it to the lodge at the next meeting and then submit it to the International Brotherhood for approval. On February 3 there is to be an open meeting to which all employees of the papermaking industry are urged to attend.

Considerable uneasiness is being felt among local paper mill employees over alleged plans proposed to establish a "dead line" at employment in paper mills as well as other industries. So far as can be learned no mill has as yet definitely established such a line; but employees assert that in some cases men who have reached 60 years or over have been informed that their services are no longer required and younger men have taken their place.

This and the talk of bonus systems, one kind or another, has evidently stirred up the employees to seek by some means to ease the situation. The plans proposed that are likely to be submitted to the paper manufacturers are therefor of wide interest to the industry not only in Holyoke but outside of Holyoke.

E. C. Nelson Leaves Longview Fibre Co.

LONGVIEW, Wash., February 1, 1929.—E. C. Nelson, who for the past two years has been at the head of the engineering department of the Longview Fibre Company, has resigned and left for his former home in Wisconsin, where he has acquired a partnership in the engineering and construction firm of O'Keefe & Orbison. Mr. Nelson was the inventor and manufacturer of the Nelson sawdust burner, but has disposed of his interest in this business.

Paper Demand Rather Spotty in Philadelphia

Uncoated Book Paper and Durable Coated Stock In Satisfactory Request—Cover Papers Continue to Move In Good Volume—Writing Papers Less Active Than of Late—Coarse Paper Market Lags Although Wrapping Papers Are Fairly Active

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., February 5, 1929.—With a spotty market that indicates month end trading, the paper distributors are marking time. The main factor here is the keen bidding that is being carried on by both mills and distributors. The price situation is uncertain as dealers and mills keep alert to trading opportunities and are willing to make terms propitious to the buyer rather than to the seller in so far as broader margins of profits are concerned. This tendency has created cautiousness on the part of the consumer and confusion over future values where such terms have been made. Leading factors in the local industry are looking ahead with confidence to the springtime upswing of the paper industry and soon will be stocking paper goods purchased during the recent attractive levels.

Among the fine paper list of salable grades at present are the uncoated book lines and wares used by the advertising trade and for direct mail purposes and special numbers of durable coated stocks. Cover papers are in fair demand. Writing papers are less active. Announcement stocks and high grade stationery lines hold fairly well although demand is not up to normal requirements of the season. Bonds of popular priced grades are being bought by commercial printers and stationers in hand to mouth supply but frequent inquiries from out of town consumers indicate a better market in the early days of the month. Wrapping papers are fairly active, despite the lagging market for coarse grades and specialties. Tissues are firm but in little demand. Builders papers move slowly but dealers are preparing for renewal of activity in these grades in preparation for the spring outdoor construction program. Boards continue confused, as bids are made at pre-war day levels with prices as low as $30 and $35 per ton for chip. While both the larger manufacturers and their competitors in the local converting trades are vieing with one another for orders, the bag markets are much disturbed, with little evidence that the situation will change in the immediate future. Cuts have been deep on all grades of bags.

Alternating between days of activity and more frequent spells of drifting, the paper stock and rag markets are see-sawing in the seasonal slack of mill orders. The general list has been churned in the mixed market with tendency to softening of prices of the lower grades of stock where considerable tonnage orders are available. However, the mills are infrequent buyers of volume paper stocks, so that little can be said in favor of profitable business being contracted by the wholesalers. The sparse grades of book papers and ledgers and high grade writing stocks, which until recent days were in heavy demand, have been showing less activity, but as supplies are practically nil, the lack of orders have not affected prices which are holding steadily to the levels of the early year.

Reigel & Co., Inc., Reorganized

With the announcement during the week of the change of ownership in the old established firm of Reigel & Co., Inc., 140 North 6th street, the control of the business passes to the hands of associates long linked with the concern, one of the largest fine paper distributors in this section. The following announcement was sent to the trade during the week upon the election of new officers and the perfecting of the reorganization:—

"On January 1, headed by Edward McCorkendale and Winfield Predmore, a number of the personnel of the old organization, who had been with the company for a number of years, took over the Reigel interests in the company. In that change, Edward McCorkendale becomes president, A. B. Sherrill vice president, having resigned as treasurer. Winfield Predmore becomes treasurer, succeeding himself as assistant treasurer. George E. Randall withdraws as secretary. R. LeRoy McCall becomes secretary as well as manager of sales. The new company will continue the same policies as the old and will continue to represent the same mill connections that have been represented in the past."

The newly elected president of the company is the son of Roger McCorkendale, who until his death over a year ago was superintendent of the mills of the Parsons Paper Company, of Holyoke, Mass. He long has been linked with the firm as a sales executive. Vice President A. B. Sherrill, since the organization of the company, has been associated with the Reigel interests as active head of the old concern. The new secretary has been connected with the sales staff for several years and succeeds James McCracken, who until the current month when he became affiliated with the Garrett-Buchanan Company, was sales manager. He took over the duties of the sales management with the past week. The Reigel company has been established for more than 22 years and has the local representation of some of the leading mills in the country. A wrapping paper department is conducted and this division of the business remains under the management of George E. Randall, who retires as secretary to give all his attention to the business of sales promotion of coarse grades and specialties.

Mulch Paper Controversy

Two of the pioneer manufacturers of mulch papers in the local territory have become linked with the disputed entanglements that have been involved in the production of mulch papers and the use of the term "Mulch." The firms involved are the National Waterproofing Company, of Camden, N. J., and the Keystone Mulch Paper Company, of this city. Both concerns were recently launched as producers of mulch papers. They have been notified that there are patents covering the basic manufacture of these papers by a nationally prominent paper company which states it has been granted exclusive rights to produce such products under what is known as the Eckart patents. Advice from local patent attorneys consulted by the firms has been to the effect that the Eckart patents are limited in scope and that they do not purport to cover every possible use of asphalt containing paper as mulch for plants but they do cover broadly the use of certain types of opaque heat absorbing material in which plants are planted through openings made in the paper, as well as other details, such as the provision of drainage openings in the mulch. There are several other patents in the United States Patent Office, it is reported, covering mulch papers, antedating those of the Eckart patents which have been subjected to dispute in relation to the granting of said patents to the latter by the patentees, but which were found by the Patent Office to be insufficient reason for refusing the claims that appear in patents. This applies to the Wood and Cowles patents. There is another patent, the Turner No. 921,484, which lacks the first essential of the Eckart idea, namely, the use of an opaque heat-absorbent material, chiefly designed to keep berries from contact with the ground. After consultation of patent authorities in the Quaker City it is claimed that there is no barrier to the use of the word "Mulch" by the local manufacturers and that they are restricted only in the use of the Eckart or other patents. Under this decision of competent legal advice the local producers are going ahead with the manufacture of their own designed mulch papers based upon the use for agricultural purposes in maintaining moisture, keeping the soil soft and pliable and the retention of heat as well as other growth promoting factors. Apart from the Eckart patents it is stated that it is

open to anyone to lay plain unperforated sheet paper between rows of plants so long as no plants are planted through the sheet nor drainage openings made in the sheet, and therefore open to any manufacturer to sell such paper for such use only. It is also advised that manufacturers selling mulching papers should take precautions reasonably necessary to prevent the use of the paper by the purchaser in an infringing manner, that is, to see the purchaser does not plant the stock through planting openings in the paper nor make drainage openings in the product. It has also been advised that the manufacturer state in his advertising matter and sales literature on the labels used on his goods that they must not be used with such perforations by the consumer or purchaser in order to avoid liability for direct infringement. The two local concerns are perfecting plans for further extension of their production of mulch papers with due regard for the rights of the Eckart and other patents and their technical construction of the papers.

New National Waterproofing Products

With the perfection of its new mulch papers the National Waterproofing Company, with Philadelphia offices in the Drexel Building, and manufacturing plant located in Camden, N. J., is now shipping larger quantities of the National Mulch "Kulture Kraft" to the distributors and consumers in preparation for the coming spring activities in the agricultural industries. The new line of mulch papers has been specially treated for the absorption of heat and aids in maintaining the moisture in the soil and eliminates weeds that infringe on the vitality of the crops. The "Kulture Kraft" is a strong, black impenetrable and inexpensive mulch and causes soil nitrate to run much higher by retention of moisture and increasing the temperature in the soil. It is produced in two types of 18 inches, in 900 lineal feet and 30 lbs. to the roll and 450 lineal feet of 30 lb. roll. It is sold for use between the rows of the plants and not for perforation planting and drainage purposes. Another new product is the B-N Building and Insulating papers, of waterproofed, air tight, vermin proof, strong and lasting qualities produced in 36 inch rolls containing 500 square feet in shipping weight of 23 lbs. The National company is also offering an entirely new String-lined kraft, a duplex paper reinforced with string and jute. The new kraft is made in two grades, with cotton string and an extra strong and durable jute reinforcement and waterproof variety for duplex case linings. Samples of these newest developments are now being sent to the trade from headquarters of the president of the company, Isaac Collins, 1054 Drexel Building.

Bag Specialties by Caukenell Bag Co.

A new line of bag specialties has been offered the Philadelphia dealers within the past week by a visitor from the southern manufacturing field, James H. Steinmetz, representing the producers, the Caukenell Bag Company, of Richmond, Va. In introducing the newest specialties to the Quaker City distributive trade, Representative Steinmetz displayed an especially strong and salable assortment of garment bags, banana bags and poultry and flour sacks produced by his concern which were freely purchased as new 1929 offerings by the paper houses catering to the wrapping paper and allied specialty lines.

Shryock Brothers Mills Extolled

An interesting comment on the Shryock paper making family was recorded in the famous "Girard's Talk of the Day" column which daily appears in the *Philadelphia Inquirer*, on January 31. This famous column is given over to reminiscences of historical and notable events of the Keystone State and surroundings and in the course of comments on Chambersburg and the part it played in the State history, mention is made of the old Shryock paper mills of that city, from which the present firm of Shryock Brothers, board manufacturers, of Downingtown, Pa., originated. The column notation states: "Shryock at once recalls to Pennsylvanians an ancient line of paper manufacturers. Their paper mills have been large industrial factors at Chambersburg and other central Pennsylvania towns for generations. It was a Shryock plant which General McCausland, the Confederate raider in 1864, destroyed when he did not get $100,000 in cash. The Shryock ancestors came in direct contact with old Colonel Thomas Cresap's invaders from Maryland, since they owned tracts of land in famous Springettsbury, York county."

Schwartz & Co. Removes

With the first of the new month, the wrapping paper and specialty house of Schwartz & Co., 3 Bank street, began removal to the new warehouses and offices located at 151 North 3rd street, where has been acquired a five story structure to provide for expansion of business. The firm expects to be entirely settled in its new home by late March. While removal is already under way there still is being carried out the remodeling of the premises for the modernizing of the building into an up-to-date paper center with electrical conveyors, steel shelvings for the storing of paper and the installation of elevators and other appliances for the handling of stocks. Modern offices are also being constructed for executive and sales headquarters. The old quarters will be abandoned when the removal is completed.

Mrs. G. B. Goldman's Tragic Death

Trade sympathies were extended to George B. Goldman, vice president of the Goldman Paper and Stock Company, 414 South Front street, during the week, upon the tragic ending which came to his wife, Mrs. Ada Goldman. When Mr. Goldman arrived at his home, 5735 North 12th street, last Thursday evening, he found his two small children weeping near the top of the cellar steps. Below the steps lay the body of Mrs. Goldman, aged 26 years, who died from a broken neck sustained when she fell while descending the stairway. Mr. Goldman immediately called an ambulance and had the body removed to the Jewish Hospital where Mrs. Goldman was pronounced dead. Mrs. Goldman had been in poor health, suffering from a nervous affection.

To Speak at Brotherhood Convention

ALBANY, N. Y., February 4, 1929.—Many persons of importance in labor circles have been invited to speak at the coming convention of the International Brotherhood of Papermakers which opens at the Queens Hotel in Montreal on March 5. Invitations have been extended by W. R. Smith, president of the Brotherhood, to William Green, president of the American Federation of Labor, Matthew Woll, vice president, and Tom Moore, president of the Canadian Trades Congress. The Pulp, Sulphite and Paper Mill Workers' Union will also hold its convention in Montreal at the same time the papermakers are in session. Announcement to this effect was made this week by J. P. Burke, of Fort Edward, head of the organization, and it is planned to hold sessions in the Mount Royal Hotel. A successor to M. H. Parker, late vice president of the Brotherhood who died recently in Toronto, will be made by the executive board at a meeting in Montreal early in March. So far as is known no selection has yet been picked for the position.

Buy M. and G. Paper Products Corp.

GREENWICH, N. Y., February 4, 1929.—The Stevens & Thompson Paper Company has purchased the business and plant of the M. and G. Paper Products Corporation at Allston, Mass., and has already taken possession. The output of the firm will be increased to some extent under the new ownership and a number of new hands added to the present working force. The company will continue to operate mills at Big Falls, North Hoosac and Walloonsac. Edward T. Jones, general manager of the plant in this village, is supervising the reorganization of the newly acquired property. The new branch will be operated as a converting mill and the company's trade in Boston and other New England points will be supplied from Allston. Shipments will be made principally by motor truck and a large stock will be maintained at the new mill for eastern trade. The products of the new plant will include tissue paper, paper towels, paper plates and other commodities.

Ontario Pulpwood Situation Rather Involved

Owners of Large Blocks of Timber In Northern Section of Province Asking Exorbitant Prices For Acreage—Canadian Wirebound Box Co. Purchases Thompson & Harris Corrugated Box Plant—Charles R. Dodge Engaged By Mersey Paper Co., N. S.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, February 4, 1929.—The Boer War and the Fenian Raids cost the Province of Ontario a "pretty penny" in timber wealth, and the Ferguson Government in Queen's Park, Toronto, is just now realizing, after twenty-eight years, what expensive propositions these scraps were. Millions of dollars worth of pulpwood which ordinarily would have remained Crown property were converted, indirectly, by these campaigns into private holdings from which vast quantities of timber have been cut and is still being cut, immune from Government control of any kind, save some meager taxation, and shipped to the United States in its raw state, totally unaffected by the "manufacture before export" regulation which at present applies to pulp-timber cutting from Crown lands.

When the boys came home from South Africa steps were promptly taken by grateful citizens to reimburse them for services rendered. The steps culminated in the issuance of thousands of certificates, every one of which entitled its war-veteran holder to 160 acres of land in Northern Ontario, or to the privilege of accepting in lieu thereof a cash consideration of $50. Many of the men released their land rights by taking the cash, but the great majority hung on to the property that had been gratuitously given them. No sooner had the Boer War veterans been "remembered" than the Fenian Raid campaigners—men of '66—laid claim to similar consideration from a generous country. In time they, too, got their 160 acres. All told, some 16,000 certificates, involving donation of 2,560,000 acres of land, were issued before the authorities called a halt. Very few recipients ever saw their Northern property, let alone settled on it.

With the passing of time private pulp operators began to buy up these 160 acre lots. They are still acquiring them. Some of the most valuable pulp timber located in Ontario is to be found in the big blocks of the North country that were set aside for the veterans of the Boer War and the Fenian Raid of 1866. In the valley of the Groundhog and Matagami rivers, for instance, there is one block of timber—400 square miles of it—from which, in the opinion of Walter C. Cain, Deputy Minister of Lands and Forests, there has been cut, or will be cut before the supply is depleted, more than $1,500,000 worth of choice spruce and balsam. This particular block is only one of numerous similar-sized blocks that are scattered over Northern Ontario. The Ferguson Government is in no position, it is stated, to buy back the lands of those who, to date, have resisted the private pulp operators' cash jingling. Hold-outs have with the lapse of time acquired a new idea of value of the acreages they might at one time have considered releasing for a paltry $50, and are asking prices so exorbitant as to be beyond any consideration. On top of that titles have constantly changed since the vesting of original rights, and now it is difficult in some cases to determine who owns certain property and who does not. The matter has been under consideration at Queen's Park of late.

Hammermill Company's Pulpwood Operations

The Hammermill Paper Company purchased and shipped 40,000 cords of wood during the past season in the Northern Ontario region, of which over 12,000 cords was sap-peeled wood, and was produced during the spring and summer months of 1927, hauled to the various streams and railways during the winter months, and shipped this past summer. The cost of this wood, all of which was spread among the small farmers and jobbers, chiefly in the Port Arthur district, amounted to over $600,000, and the freight on many thousands of cords was paid to the railway companies. Employment during the season ran as high as 650 men, and during the fall and winter many hundreds of men were employed cutting and hauling the wood. The development of the peeled wood phase of the business has enabled the farmers and others to dispose of their balsam wood, which is only accepted in small quantities by the local mills. During the past summer the company purchased more than 25,000 cords of this class of wood. This has given steady employment to many men during the peeling season, and they have also contracted for an additional 50,000 cords of rough wood that is being produced now. Half of this wood will come to Port Arthur by rail this winter, and will be unloaded onto the ice ready for shipment in the spring. The company has been buying pulpwood in the Port Arthur district for more than twenty-five years.

Cutting Pulpwood Off Flooded Area

In the developing of electrical power by the Seine Development Company, a large tract of land lying south of Savanne has become flooded. The Department of Lands and Forests, in conformity with its conservation policy, has given the Seine Power Development Company—a subsidiary of the Backus interests—instructions to take off all spruce pulpwood which is now standing in about four feet of water. There are about 20,000 cords which can be salvaged before rot sets in. The Don Clark Company, of Port Arthur, has secured the contract for the taking off of this pulpwood. Seven small camps have been built on the flooded area and owing to the scattered nature of the pulpwood, the camps have to be moved to new locations each month. To save the expense of rebuilding every month, a system unique in woods operations has been devised. Each camp is built on timbers constructed into what is really a huge sleigh. When one flooded spruce camp is cut out and a move made to another, a four-horse team is hitched on to the improvised sleigh, and away over the frozen lake go bunk-house, kitchen and dining room, pots, pans and all. In a few hours' time business as usual is being done on a new site, a few miles from the last.

Pulpwood Jobbers Report Prices Low

Unprecedented conditions in the scarcity of snow is reported from all the districts of Rainy River, Thunder Bay and Kenora, Ont. Up to well on toward the end of January less than three inches of snow had fallen and most of this had been ground down on the tote and sleighing roads. Several lumbering and pulpwood firms had been hauling over made-up iced roads and this necessitated a heavy outlay of labor to keep them in condition. On the smaller operations, where the season's contract cut is piled up in the bush, operators are anxiously scanning the sky for the snow which has never in any past winter failed the district. Pulpwood jobbers report prices very low this winter. With the slump in the paper market, which has necessitated the closing down of two mills in the district, there is only a small demand for wood, with the consequent keener competition among jobbers and those who have small limits which they have bought from the Government. Some state that they have had to take their contracts at cost in order to pay the overhead on their investment in camps and equipment. In the Port Arthur district, hauling of pulpwood and other forest products is proceeding at a fairly lively rate. On the ice, opposite the Canadian Pacific station at Port Arthur, has already been deposited about 200 cords of pulpwood cut by farmers in McIntyre and adjoining townships. The wood is for export. Bush operators report that while they do not expect to cut as much

pulpwood as in 1928, particularly for Canadian consumption, there are orders on hand for much export wood and the majority of the camps are now in the midst of the season's operations. Lately the first heavy train of pulpwood was transferred by the Canadian National through the Port Arthur yards to the plant of Provincial Paper, Ltd. There were 360 cords in the shipment.

Acquires Corrugated Box Plant

Expansion of the box manufacturing business in Toronto is again illustrated by the purchase of the former plant of Thompson and Harris, who were manufacturers of corrugated boxes, by the Canadian Wirebound Box Company, 1,000 Gerarrd street East, which adjoins. The deal means taking over a building providing 80,000 square feet of additional space and over half an acre of vacant land as well as a railway siding which will accommodate fifteen cars. The purchasers plan to double their capacity and output and enlarge the office space to the west by building an addition on a vacant parcel, 30 by 72 feet.

Presented With a Gold Watch

Charles R. Dodge, chief electrician at the Great Lakes Paper Company, Fort William, Ont., for the past five years, left recently to take a new position with the Mersey Paper Company in Nova Scotia, at the head of which is Colonel C. H. L. Jones, former vice-president of the Spanish River Pulp and Paper Company. During the five years that Mr. Dodge resided at the head of the lakes he was in charge of the entire installation of electric and power facilities for the Great Lakes Paper Company. Previous to his departure he was entertained by the staff of the company and the Backus-Brooks Company and presented with a gold watch.

Extensive Reforestation Plans

Ontario is to have its first "Provincial Forests" and its first Government controlled and operated Northern "playgrounds" this year. Legislation by which the Hon. William Finlayson, Minister of Lands and Forests, will seek this session of the Legislature to perpetuate the timber and pulpwood resources of the Province provides for both these new and broad features of departmental enterprise. From seven to ten great areas in Northern Ontario, including the present Temagami Reserve, with an area of 5,380 square miles; the Mississaugua Reserve, with, roughly, 4,800 square miles; the Nipigon Reserve, with 6,000 square miles and the Quetico Park Reserve, with 1,720 square miles, will, under the new legislation, be designated as "Provincial Forests" and given over entirely to reforestation on a gigantic scale under direction of expert technical foresters and assistants from the departmental staff. Convinced, it is said, that the time has arrived when the timber wealth of Ontario must be placed on some sound, definite basis, the Government will prosecute its reforestation policy on a scale hitherto undreamed of. Forest reserves were established under the Forest Reserves Act of 1895 for the purpose of protecting specific areas of standing timber. These stands, at the discretion of the authorities, could be withdrawn from sale to promote the maturing of young timber. The Timagami, Nipigon, Mississaugua and Quetico—and some smaller reserves, including the Sibley and the eastern—have, it is understood, justified by their timber growth the passing of the old act, and should form a solid basis for the lofty scheme which Mr. Finlayson has now in mind. Other areas in the North will be surveyed and the most suitable for reforestation purposes will be selected by departmental foresters and set aside in accordance with the terms of the new legislation.

American Envelope Co. Elects Officers

WEST CARROLLTON, Ohio, February 4, 1929.—At the meeting of the Board of Directors of the American Envelope Company the following officers were elected: President and treasurer, Carlton W. Smith; vice president, D. P. Hoffman; and secretary, Albert E. Smith.

Coty Bag Corp. Announces Expansion Plans

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., January 28, 1929.—The Coty Bag Corporation has extensive expansion plans under way which will allow of a large increase in the concern's production. The company has leased a factory building on East Main street owned by the New York Air Brake Company which will be operated in conjunction with the main plant. The firm's business has outgrown the present factory on West Main street which influenced to a great extent the decision to expand. Simultaneously with the announcement it was learned that the bag company has entered into contract with a distributor of paper bags for taking over the entire output of the mill which insures a prompt market besides permitting officers of the firm to devote full time to production. In making public the planned expansion the following statement was issued:

"The Coty Bag Corporation of this city has completed all arrangements necessary to the beginning of operations on February 1. Lease of D Building of the New York Air Brake Company has been signed under terms highly advantageous to both companies and the bag corporation will move its machinery and equipment into its new plant as rapidly as possible. Selling arrangements have been completed whereby a leading distributor of paper bags in the eastern states guarantees minimum net sales of $2,000,000 per year. This company is to do all the selling, purchasing, billing and collecting, is to bear all credit losses, and will pay the bag corporation for all shipments within thirty days. The main line of production will be single wall and duplex kraft sacks for carbon, charcoal, chemicals, coal, coke, feed and grain, nails, lamp-black, paints, plaster, sugar, talc and many other commodities. Besides this line other lines will include grocery bags, flat and square bags, special bags of various kinds, blue-lined flour bags, and pasted multi-wall valve bags for cement, lime, etc.

"The handling of the sales, purchases, billing and collecting by its selling agent relieves the bag corporation of the heaviest burdens usually met by a beginning company and allows the corporation to concentrate wholly upon efficient production. Officers of the bag corporation consider such a situation ideal, as for many years they have been employed as efficiency experts by practically all of the important sack concerns in the United States, supplying them with faster and more efficient machines than they formerly had as well as training them to get the utmost efficiency out of their machinery as a whole. The present arrangement allows the firm to concentrate upon that part of its business in which the officers are expert and turns over to the selling agent those functions which it can handle to far greater advantage, as the selling agent has a highly trained organization along these lines, representing the cumulative result of sixty years of experience. All of the sack machinery used will be furnished at cost prices by the Coty Machine Company, the partners of which are the principal stockholders in the Coty Bag Corporation. The machines to be installed are the fastest and most efficient sack machines in the world. Officers of the bag corporation are Alfred C. Coty, president; T. Earl Coty, vice president; J. Victor Coty, secretary and treasurer. These officers are also directors of the corporation. A fourth director will be appointed by the selling agent, this director also to be on the finance committee of the bag corporation company.

Alloy Chart Available

The Wm. T. Sweet Foundry Company, Inc., of Irvington, N. J., has just issued an interesting chart showing the analyses of the various alloys handled by this company together with a report of the physical and chemical properties of the alloys to be used for castings. Particular attention is drawn to the various uses of the alloys and their capacity to stand up under severe service conditions. A copy of this interesting chart will be sent to any one interested and can be secured by addressing an application to the company at Irvington.

News Print Prices May Be Made Public Shortly

Leading Executives of Industry Reported to Have Reached Agreement Upon Quotations For Current Year—Stumbling Block of Hearst-International Contract Said to Have Been Removed—Premier Taschereau Convinced of Satisfactory Outcome

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, February 4, 1929.—Although no official report has yet been given out, it is understood that the news print interests have at last agreed upon a price for the current year, and that only the formality of securing signatures to the agreement on the part of the responsible heads of the various companies now remains before the agreement will be made public. Confirmation of this view is found in the statement made by Premier Taschereau, in a newspaper interview, to the effect that he had received reassuring news as a result of the last conference in New York, and that he was convinced of a satisfactory outcome. Fifty-five dollars a ton is still the figure that is mentioned, although in certain quarters it is said that the price will be $55.50. The stumbling block of the International-Hearst contract is said to have been removed under certain provisions which it is considered certain will be met, so that the one-price system will apply generally.

It may be remarked that even at $55 per ton, the price would still be $10 per ton less than what is considered here would be a fair price for news print, having regard to the general average cost of production. On the basis, therefore, of last year's production of 2,380,000 tons in Canada, a price of $55 per ton for this year would represent a curtailing of legitimate profits of $23,800,000. Added to this is, of course, the heavy loss occasioned by 20 per cent of the capacity of Canadian mills lying idle.

While, therefore, the feeling in news print circles is much less pessimistic than for some months past, it would be making too great a claim to say that anything like optimism prevails. The situation is well put by Greenshields and Greenshields, one of the largest financial houses in the city specializing in high-grade securities, who, in their weekly Review, offer the following comment:

"We do not consider that clients are missing any very apparent opportunity in holding aloof from news print common stocks at present levels. Much as co-operation among producers may be desired, the industry cannot hope to overcome by a single act of price-fixing the evils engendered by a period of over-expansion. The policy of 'wait and see,' while it may mean paying somewhat higher prices, recommends itself in preference to the policy of hasty buying in hope of an easy solution of the industry's present difficulties."

Snowfall a Boon to Lumbermen

Moderate snowfalls during the past week have been a boon to lumbermen in Eastern Canada, whose operations had been greatly impeded by the mild weather. Hauling of logs and pulpwood have been resumed, and though it is hoped to make up for lost time, lack of snow up till now will make the season short. In this connection it may be remarked that horse sleighs are rapidly giving way to sleighs hauled by tractors with caterpillar wheels, which will haul six or eight loaded sleighs at a time and at twice the speed, over the same roads.

Lumbermen's Association Annual

The annual convention of the Canadian Lumbermen's Association was held in Montreal last week, and was largely attended. The discussions revolved mainly around suggestions for improving the trade and of meeting the competition for lumber substitutes, which in late years have seriously diminished lumber sales. It was decided to institute a campaign of trade promotion and expansion in which advertising is to play a large part, and support for such a campaign was promised on behalf of the Governments of Quebec and Ontario. Major J. I. Hart, superintendent of Crown Timber Agencies at Toronto, spoke for the Ontario Department of Lands and Forests, and G. C. Piche, chief of the forestry service in this province, on behalf of the Quebec department. There has been a good deal of co-operation recently, said Major Hart, between Premier Taschereau and Premier Ferguson in the matter of forest problems. Primarily they are trying, not to restrict the lumbermen and other wood users, but to assist them. The Ontario Government has been investigating the utilization of saw-mill waste, and has now drawn up a list of methods by which this may be done most efficiently. This information is available to all lumber manufacturers.

In this way, said Major Hart, the lumbermen, instead of sitting by and watching their competitors make substitutes for lumber, may use their own wood-waste to make these substitutes, and thereby profit greatly. At present there are mills in Northern Ontario which simply burn up this waste, in plants which have cost them considerable sums to erect.

Mr. Piche stated that out of 1,200,000,000 feet of spruce, balsam, and jack-pine cut in Quebec last year, only one-quarter was used in the making of lumber; the rest had gone to make pulp and paper. However, the statistics of the production of sawn lumber in the province were rather misleading, as much of it was shipped out before being tallied. Since 1921, he pointed out, the Government has done a great deal to help the lumbermen by reducing the dues on lumber, and he said that the lumber and the pulp and paper industries were the greatest assets in the Province of Quebec.

At the general meeting it was announced that W. R. Beatty and J. L. Crane had been elected directors for Ontario to replace Walter C. Laidlaw and A. B. Gordon, while Walter M. Ross had been re-elected for that province, J. S. Bock and A. H. Campbell re-elected for Quebec; William E. Golding for New Brunswick, and Rufus E. Dickie for Nova Scotia.

The directors then adjourned to a private meeting, after which it was announced that E. R. Bremner, of Ottawa, is the president-elect, replacing Brigadier-General J. B. White, G. Percy Burchill, second vice-president, becomes first vice-president, and A. C. Manbert becomes second vice-president. R. G. Cameron remains honorary treasurer, and R. L. Sargant, secretary.

Made Vice President of Great Northern

At a meeting of the directors of the Great Northern Paper Company in New York, January 23, William D. Hilton of Bangor was elected a vice president and manager of the spruce wood department.

Mr. Hilton was born at Chesuncook. He was educated in the public schools of Greenville, and graduated from the University of Maine in the class of 1911 with a B.S. degree in civil engineering.

After graduation Mr. Hilton was employed for several months by James W. Sewall, forester, Old Town.

On August 1, 1912, he became connected with the division of forest engineering in the Great Northern Paper Company. In 1917 he was made superintendent of this department, which has direct supervision of all engineering in connection with the building of roads, dams and buildings, as well as the management of the company's forest policies, inspection and scaling.

February 1, 1928, Mr. Hilton was promoted to the position of assistant manager.

Mr. Hilton is well qualified to assume this responsible position because of his varied service with the company in the management of its extensive operations in the northern part of the state, and his intimate knowledge of the timberland situation in the state as a whole.

BIRD MACHINERY

Do YOU know what it will do?

We can show you that the Vickery Doctor is now used to

increase production
improve quality
prolong wire life
save steam • •
save time and labor
and to keep <u>every</u> roll
<u>always</u> clean

May we install one on trial?

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2509

Chicago Paper Trade Generally Optimistic

Distributors of Paper Anticipate Better Spring Trade Than Last Year—Some Improvement Noticed In News Print Situation—Fine Paper Merchants Are Conducting Strenuous Campaign—Wrapping Paper Movement Is Gradually Expanding

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., February 2, 1929.—The coming meeting of the National Paper Trade Association is forming one of the chief topics of discussion in Chicago paper circles this week. Quite a number of paper jobbers, representatives and dealers are expected to go to New York to attend the meeting which, according to Noble Gillette, president, will be unusually interesting and worthwhile.

Sub-zero weather has given Chicago a real touch of winter and has had a slight effect on retail sales. The first week in February does, however, give promise of a good spring trade, evidently better than for the corresponding period one year ago. The wrapping paper market is progressing out of its early January slump in good shape and this more or less characterizes the different grades of paper sold in the Chicago market.

News print is still a matter of conjecture in offices representing this line but the situation is reported to have improved somewhat in the past week. The board market, especially box board, gained somewhat with the box board situation beginning to clear up because of basic economic reasons, according to reports. Fine paper merchants are still trying to overcome their slender margin of profit with volume. Some of the finest sales methods, direct mail and advertising tieups are being called into play to increase this volume.

Cutting Shipping Costs

Almost concurrent with the holding of a successful meeting in Chicago in January, the Paperboard Industries Association issued to prospects of its members two separate pieces of direct mail literature on important subjects, treated in very acceptable and attention getting fashion. One booklet, of sixteen pages, contains an interesting discussion of shipping costs with the subject "Cutting Shipping Costs" sure to be of attention to any wide awake executive. As explained on the fly sheet the book contains a countrywide survey of conditions relating to trucking and to the use of corrugated and solid fiberboard shipping containers. New trends in packing and shipping introduce the executive into a discussion of the advantage of corrugated or solid fiber boxes and giving a survey of the trucking situation in seventeen leading cities throughout the United States to show the popularity and good treatment of the corrugated or solid fiber box by the trucking firms. To give a stamp of authenticity to the interesting survey the names of the trucking concerns are listed.

Another piece of direct mail evidently sent out to makers and distributors of coffee is entitled "Coffee" and gives an interesting series of cup tests from folding boxes and tin containers. The booklet is cut in the shape of a carton of coffee and, in addition to listing the results of the tests, gives a brief story of the origin of the use of coffee and its growth to enormous popularity. Specifications of the four folding boxes which proved most satisfactory in the tests are listed.

Both pieces of literature are got up to interest the executive affected by the study and are at once a tribute to the workmanship of the Paperboard Industries Association and to the amount of research put forth to make these booklets authentic.

Edgar Hall's New Duties

Edgar A. Hall, Jr., general manager of Pilcher-Hamilton-Daily, returned from the headquarters of the Crown Zellerbach Corporation on the Pacific Coast a week ago. While there Mr. Hall completed definite arrangements to take over the eastern sales division of the corporation, acting in the capacity of sales manager. Mr. Hall's resignation from Pilcher-Hamilton-Daily, where he had spent practically his entire business career, came as a decided surprise to his host of friends and acquaintances in the paper business. The resignation was dated to take effect February 16, and had been so announced. At that time, however, the exact duties of Mr. Hall were not definitely settled. The headquarters of the eastern division are at 386 Fourth avenue, New York City, while the territory is described as the cities east of the Mississippi River. Mr. Hall expects to be in Chicago frequently and this news is heartily acceptable to the many friends of Mr. Hall.

Cost Accounting Program

The Chicago Paper Association held a meeting on Tuesday, January 29, at the Bismarck Hotel. According to Leo Altholz, president of the association, the meeting provided for the most part a continuation of the discussion on the cost accounting program now practically completely adopted by progressive members of the association. The coarse paper merchants are acting in close harmony on the matter and working in cooperation with Stevens-Harrison-Jordan, the firm of engineers acting in a secretarial capacity for the Association.

Mr. Altholz also announced that a dinner and entertainment for executives and salesmen of member organizations was to be held probably at the Palmer House, some time early in March. Although the date has not been definitely set plans for the program are nearing completion for this event that always assists in bringing salesmen and executives into a closer understanding.

Salesmen's Association Plans

The Chicago Division of the Salesmen's Association of the Paper Industry will have one more special program with a speaker of national importance featured before the annual meeting of the association in New York City. H. R. Knott, president, is not able to state definitely who the speaker will be. According to Jim Coy, a number of the mill representatives are again planning on one or two special cars to take the crowd, leaving February 17, to the American Paper and Pulp Association Convention, all in one happy bunch.

Indianapolis Reports Better Demand

INDIANAPOLIS, Ind., February 4, 1929.—A slow increase in the demand for many grades of paper is noticed in this territory. The increase is hardly as great as the trade expected, due to a number of causes. In the first place it seemed many of the users were a little slow in completing their inventories. These have been completed now and most of the consumers are entering the market for their immediate requirements.

In spite of rather soft prices in the news print field, the demand is not what it should be at this time of the year. The publishers are mighty cautious in their buying and the volume of business being done by the papers is not of such volume as to force the publishers actively into the market.

Much the same indifferent demand is noticed in book and fine papers. The local jobbers, however, are optimistic and believe once the demand starts in earnest, it will not take long to bring the general demand level to normal.

Local printers say there is considerable work in prospect. The large advertisers are beginning to think of their spring campaigns and a considerable amount of figuring is being done just at the present time even though demand is slack.

With the ending of the holidays, the active demand for glassine papers has slumped, but this was to be expected. The demand now is the normal one for this time of the year.

A rather active demand is seen, however, for box papers and corrugated board. Most of the box factories are producing a little better than they did this time last year and indications point to more production.

DOWNINGTOWN Suction Rolls

Kilberry Patent Suction Couch Roll

Partial List of Users:

St. Regis Paper Co.
Frazers, Limited
Mohawk Paper Makers
Calcasieu Paper Co.
Nekoosa-Edwards Co.
Marinette & Menominee
Consolidated Paper Co.
Jessup & Moore Paper Co.
Fort William Paper Co.
Hinde & Dauch Paper Co.
Johns-Manville, Inc.
Deerfield Glassine Co.
Donnaconna Paper Co.
E. B. Eddy Company
Continental Paper & Bag Co.
Laurentide Co., Ltd.
Congoleum-Nairn, Inc.
Hummel-Ross Fibre Corp.
Scott Paper Co.
Louisiana Pulp & Paper Co.
National Asbestos Co.
Beaver Wood Products Co.
Price Brothers, Ltd.

Downingtown put the Kilberry Suction Roll on the market as **no improvements** to the suction rolls in general use, had been made for many years.

Downingtown introduced the small journals and anti-friction bearings now in general use.

Downingtown introduced the direct drive which is a patented feature of our roll, permitting the installation of a suction roll for a plain couch or press roll by coupling direct to the floor drive.

Downingtown introduced a suction roll with a suction box supported by its journals in such a manner that the seal is maintained without adjustment and with a minimum of operating friction.

Downingtown introduced a method of changing the angular position of the suction box by means of an outside adjusting device, while machine is running.

Downingtown introduced the spiral staggered drilling of the holes in the shell which is a standard feature of our roll, thereby increasing the strength of the shell, preventing the cutting or scoring of the packing and the inside surface of the shell, and reducing the marking of the sheet and prolonging the life of the felt.

Downingtown will introduce other features to maintain our suction rolls as the best that can be built.

Downingtown feels that the Paper Industry has benefited largely thru the above suction roll improvements, which were introduced by us.

Downingtown had to undergo the cost of expensive litigation to prove their right to give the above improvements to the Trade. The United States Court of Appeals in a sweeping decision in our favor gives us this right.

Downingtown builds suction couch rolls and suction press rolls by the centrifugal casting process in all sizes, large and small.

Downingtown solicits your inquiries and an opportunity to serve you.

Our Products Meet Our Promises

DOWNINGTOWN Manufacturing Company Downingtown, Pa., U. S. A.

Northern Paper Mills to Install New Machine

Beloit Iron Works to Build Big New Machine With Web of 175½ inches and Productive Capacity of 1,200 feet Per Minute—To Accommodate New Machine, Addition to Plant Is Being Built—Officers of Company Re-Elected At Annual Meeting

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., February 4, 1929.—Installation of a new high speed paper machine at the Northern Paper Mills, Green Bay, Wis., was announced at the annual meeting of stockholders last week as part of a $500,000 improvement program. Reports for the year showed that 1928 was the best in the experience of the company over a period of ten years.

An order for the new machine has been placed with the Beloit Iron Works, according to W. P. Wagner, president. It will be known as No. 7 and will replace machines Nos. 1 and 5. With a web of 175½ inches, it will turn out 1,200 feet a minute. This will be double the capacity of any machine in operation, since the output of the present machines is 400 to 600 feet. Production will be started at 30 tons daily, increasing gradually to 45 or 50 tons.

In order to accommodate the new machine, the company is building an addition to the mill, utilizing a court formed by the present mill, the warehouse and a new converting plant which is nearing completion. Construction of the latter and additional warehousing facilities has been in progress since last spring, in anticipation of the increased production. The building improvements total about $175,000. There will be side tracks under cover for the more efficient loading of finished products.

Officers of the company were re-elected as follows: W. P. Wagner, president; Earle Murray, vice president; Judson G. Rosebush, treasurer and general manager; A. R. Burton, secretary and assistant treasurer.

A meeting of stockholders of the Northern Electric Company, the power subsidiary of the Northern Paper Mills, was held on the same date and the same officers elected. Reports showed that the large twin power plants recently completed at Chalk Hills and White Rapids, on the Menominee River, were producing more than the needed power because of the flood conditions and sufficient water to keep the generators supplied with a full head of water. One plant supplies the Northern mills and the output of the other is sold to the Milwaukee Electric Railway and Light Company.

Badger Paper Mills Financing

Financing plans of the Badger Paper Mills, Inc., Peshtigo, Wis., have been announced. This is the company that bought the mills of the Peshtigo Paper Company at auction recently. The classes of securities are as follows: $400,000 par value of 10-year 6 per cent sinking fund first mortgage bonds; $715,000 par value 6 per cent preferred stock, and 65,000 shares of common stock of no par value.

The old company had outstanding $1,164,000 of first mortgage 7 per cent bonds, and these are badly in default. The exchange basis is that for each $100 unit of Peshtigo Paper Company bonds the holder will receive one share of preferred stock in the new company with a par value of $50 and one share of common stock without par value.

Edward A. Meyer, head of the new concern, has invested $100,000 in the new company, and receives 2,000 shares of preferred stock and 2,000 shares of common. He successfully operated the Marathon Paper Mills, of Rothschild, and was general manager of the Menasha Printing and Carton Company until his resignation recently to take charge of the new corporation.

Immediate operation is planned by the new company. Employees have already been called back into service to clear away snow from the yards and assist with repairs and changes in the mills. A dinner was held last week at which department heads and skilled workers were guests and listened to an outline of the operating plans by Mr. Meyer. The superintendent will be John Meyer. John Hanson will be chief chemist. He resigned a similar position recently at the Menasha Products Company, of Menasha, Wis. The Company has paid $29,800 of current taxes, and has also taken care of back taxes, which constituted the only incumbrance authorized by the court when the sale was made.

News of the Industry

Permission has been granted for the temporary operation of the Menasha Paper Mills Company, Menasha, Wis., under the receivership which was authorized by the court recently. The plant will be run for thirty days to use up raw materials now on hand and fill orders now on the books. At the same time the receivers will ascertain whether straw board can be manufactured at a profit so final disposition of the property can be decided by the court. J. M. Levin and F. H. Jaynes are the receivers.

A highly successful year was reported to stockholders of the Nekoosa-Edwards Paper Company, of Port Edwards, Wis., at the annual meeting last week. All members of the board of directors were re-elected, as follows: L. M. Alexander, G. W. Kibby, T. M. Hanks, C. A. Jasperson, John E. Alexander, J. G. Rosebush, J. B. Nash, F. J. Wood and G. O. Babcock. Officers elected were: L. M. Alexander, president and treasurer; John E. Alexander, vice president and general manager; C. A. Jasperson, secretary.

Employees of the Great Western Paper Company, of Ashland, Wis., have been provided by the company with group insurance, effective at the beginning of this calendar year. Policies provide $2,000 life insurance, and also embody accident, sickness and dismemberment features. Sick benefits will be $2 to $3 per day, and workmen will pay 60 to 75 cents weekly toward the premiums, the company paying the remainder. No examinations are required.

Safety instruction at the Marathon Paper Mills, Rothschild, Wis., is not only given to employees, but to their families as well. The company recently staged a general meeting, with talks, music and a safety play. The principal speaker was W. H. Burhop, of the Employers Mutual Insurance Company. A first aid demonstration was given by employees of the Wisconsin Valley Electric Company.

Reduction of the number of accidents has been accomplished by the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis., as the result of its continuous educational and promotional campaigns along that line. The various mills had a total of 54 lost-time accidents and one fatality during 1928. The record in 1927 was 90 lost-time accidents and one fatality.

Eagle A. Association Elects Officers

The annual meeting of the Eagle A Announcement Association was held in Holyoke, Mass., on January 21 and 22. At this meeting the new Eagle A Announcement Sample Book for 1929 was presented, and plans laid for 1930. A special feature of this meeting was a tour of the revamped Beebe -Holbrook-Wauregan Mill under the personal guidance of Leon M. Yoerg, vice president and superintendent of Fine Mills of the American Writing Paper Company, Inc.

The following officers were elected to serve the Association until the next annual meeting:

President—C. W. Dearden, Rourke-Eno Paper Company, Hartford, Conn.; 1st Vice President—W. H. Hoad, J. E. Linde Paper Company, New York City; 2nd Vice President—Geo. S. Clerk, Hudson Valley Paper Co., Albany, N. Y.; 3rd Vice President—R. E. Kreimer, Whitaker Paper Co., Cincinnati, O.; Secretary—R. F. Linsert, American Writing Paper Co., Inc., Holyoke, Mass

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New Orleans - - - - - 621 S. Peters St.
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Oakland, Calif. - - - - - 520 Third St.
Pittsburgh - - - - - - - 335 Fifth Ave.
Portland, Ore. - - - - - - - - 67 Front St.
Seattle, - - - - - - - - 820 First Ave., S.
St. Louis - - - - - - - 3638 Olive St.
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SILENT CHAIN DRIVES

Demand for Paper Satisfactory in Boston

Volume of Fine Paper Sales Reported to be Expanding and Future Outlook Is Considered Promising—Kraft Paper Continues to Move in Good Volume—Box Board Value Slightly Firmer—Some Mills Making Specialties Instead of News and Chip

BOSTON, Mass., February 4, 1929.—January as a whole has been at least fair in all grades of paper and estimated as a better month than January, 1928. Some dealers report business for the month as good, while others say it has been a little slow in all lines.

The volume of sales of fine paper has increased, according to estimates, with the opening of February and the prospect appears bright. Prices are unquotably changed, although it is reported that mills are selling news print at less than cost. Kraft continues to move in good volume.

Box board dealers appear to be somewhat less dissatisfied with price conditions, although some intimate that January business was not equal to that of the corresponding period in 1928. Values are a trifle firmer and there does not seem to be any further tendency to cut prices. Several box makers have been making estimates for customers which will probably lead to orders. It is understood, however, that much material bought when prices were cut is still undelivered. A few mills are making specialties rather than filled news board and chip board.

The market in general for both old papers and rags is rather quiet. The situation in No. 1 books heavy is slightly changed, with a smaller supply to meet the usual demand. The range of prices has advanced from 1.45 @ 1.50 to 1.50 @ 1.55, with the maximum at 1.60. No. 1 mixed paper has suffered a decline from .55 to .50, as one of the large consumers near Boston has cut the price. It is understood that New England textile mills have sold big quantities of gunny bagging on contract for the year at 1.45 f.o.b., mill points, compared with 1.60 a year ago. Less demand is given as the reason.

Twine Market Active

In twine, some good-sized sales have been consummated, particularly in jute lines, on a rising market. Prices of jute twines have advanced a half-cent on all cheap grades of wrapping lines, now quotable at 15 cents a pound. Fine Indias No. 48 have also appreciated in value, with the present quotation at 20½ cents. Slight increases in the prices of the raw material on account of crop conditions in India have given sellers of the finished product an opportunity to steady the market. While some reductions had been made, distributors are now asking figures which were prevailing in July. Hard fiber, such as sisal, is rather strong.

The new code of trade customs, adopted under the influence of the Cotton Textile Association, doing away with blanket contracts, with protection in case of a decline in the market, and applying to the sale of unfinished cotton twine as well as polished cotton twine, is working out favorably for the manufacturers.

News of the Trade

The Merrimac Paper Company, Lawrence, Mass., after considerable study, with a product combining every desirable quality in coated paper as the object, have standardized one of their grades, to be known as Merrimade Folding Coated. This stock has as much or more strength than some coated bonds; the folding qualities either way of the sheet are nearly equal and at the same time the sheet has the affinity for ink and the fine printing surface so difficult to maintain on a strong middle. The color is absolute white, entirely free from any of the pink, blue, or violet tints, which, though pleasing to look at, detract from the best results in color work or for use as a back-ground for solid black. This line will be made in the most used sizes and weights and sold exclusively through the merchant as a Standardized Mill Brand. The three exclusive New England distributors will be the Globe Paper Company, 10 High street; John Carter & Co., Inc., 595 Atlantic avenue, and Arthur E. Ham & Sons, 10 High street, all of Boston.

Carter, Rice & Co. Corporation has begun the construction of a "customers' room," with the idea of service and convenience to all. Facilities will be provided for making dummies of various kinds, and files of catalogues, booklets, announcements, current trade magazines and displays of printers' specimens will be readily accessible. The room, 22 by 20, opens from the sales room, and is artistically designed with inserted panels and mouldings.

The Carter Rice & Co. Corporation is planning to show various displays at the entrance to the building at 250 Devonshire street and on the wall by the stairs to the second floor, so that the customer will be reminded of his possible needs.

W. W. Binford, manager of the twine department of the Andrews Paper Company, accompanied by E. A. Morton, D. L. Gibbs, N. P. Nelson, Jr., and J. C. Campbell, recently visited the plant of the Schlichter Jute Cordage Company at Philadelphia, going through the mill.

John van Bael, salesman for Percy D. Wells, has taken a similar position with Charles Helmuth, ink manufacturers, New York City, and will travel in the New England territory. Joseph Porter, who has had experience in the paper business, has become salesman for Mr. Wells.

Franklin F. Spaulding, president of Spaulding & Tewksbury, box board dealers, left today for a business trip to Connecticut.

60 Year Dead Line Denied

HOLYOKE, Mass., February 5, 1929.—Employees of the paper mills still continue to be uneasy over the alleged establishment of a "dead line" of 60 years in the industry although this has been officially denied.

Adam Wilkinson, Labor Commissioner for the company, said last week that before the formation of the new American Writing Paper Company, Inc., no provision had been made for taking care of men old in service when retiring; but the company officials did not think that this was right and established a system by which an employee who had been in service 20 years or more would receive a pension based on the length of service, character of work he had been doing and his actual needs.

Objection has been voiced to this pension by some of the union men as inadequate. Mr. Wilkinson said, however, that there was no hard and fast line about retirement, the ability of the men to do the work required being the basis for retention or retirement. There were a number of men between 60 and 70 years and some 70 or over employed which would not be the case if a hard and fast rule were to be adopted. He did not think Eagle Lodge Papermakers would be opposed to the plan if they understood it thoroughly.

Ships Machines to Norway

WATERTOWN, N. Y., February 4, 1929.—Shipment of two large paper machines to Oslo, Norway, has just been made by the Williams Apparatus Company, of this city, which manufactures equipment used by paper mills in testing paper and pulp. F. M. Williams, who heads the local concern, was formerly professor of chemistry at Clarkson College. He is the inventor and manufacturer of many devices used in the papermaking industry and machinery made by the firm has met with widespread approval from all sections of this country and abroad.

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Aside from Dependable Quality, Color, Cleanliness and Chemical Uniformity, Another Special Feature Which Strengthens the Dispositions of Buyers Generally to Favor Newport Wood Rosin, is the Definite Realization of Economy.

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Outstanding Among Industries Everywhere Are the Paper Makers Who Practice the Economy of Using Newport Wood Rosin Wherever Newport Wood Rosin May Be Used in Paper Making.

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LABORATORIES AT CINCINNATI, O., DE QUINCY, LA., PENSACOLA, FLA.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Beacon, N. Y.—The National Biscuit Company, 85 Ninth avenue, New York, will soon begin the construction of a new mill at Beacon for the manufacture of cartons and containers for its packaged foods, to be two-story and basement, 320 x 580 feet, reported to cost more than $200,000, with equipment. Large capacity will be developed. A printing plant will be installed; majority of equipment will be electric-operated. Louis Werschung, Jr., is company architect, address noted; R. M. Shankland, 101 Park avenue, New York, is engineer.

Oshkosh, Wis.—The Oshkosh Paper Company, recently organized by local interests, headed by Louis A. Mueller, 146 Mount Vernon street, is said to be planning early operation of a local plant for manufacture of paper specialties. R. M. Shekey, 337 Bowen street, is also interested in the new organization.

Lynchburg, Va.—The John H. Heald Company, recently organized to consolidate John H. Heald & Co., Lynchburg, and the Mead Paper Board Company, Dayton, Ohio, has work under way on a new local paper mill, to be one-story, brick and steel, 100 x 680 feet, reported to cost more than $150,000, with equipment. The plant will be equipped for the manufacture of "liners" for the production of corrugated paper board shipping cases and containers. Operations will be carried out under a semi-technical process, using chestnut chips as raw material. It is proposed to have the unit ready for service early in the spring. Campbell King is construction engineer in charge.

Menasha, Wis.—The Menasha Products Company, River street, formerly known as Menasha Printing and Carton Company, is holding in temporary abeyance work on proposed new plant addition, recently reported in these columns. It is understood that the project will proceed early in the spring. The expansion will cost close to $80,000, with equipment.

Jersey City, N. J.—P. J. Schweitzer, Inc., 170 Cornelison avenue, manufacturer of tissue papers, etc., has completed plans for proposed new addition to plant and general contract for building has been let to D'Elia Contracting Company, 994 Westside avenue, Jersey City. The unit will be two-story, reported to cost close to $50,000, with equipment. Edward M. Annitto, 706 Bergen avenue, Jersey City, is architect and engineer.

Niles, Mich.—The French Paper Company is running at close to normal output with regular working force and reports about the same number of orders on hand as at this time a year ago. It is expected to hold to present schedule for an indefinite period.

Valparaiso, Ind.—The Fibroc Insulating Company, Valparaiso, L. T. Frederick, president, will defer construction of proposed new mill unit for a few months and it is understood that new bids will be asked on general contract at this later date. Plans for the project have been completed by Lockhart & Fett, Associates Building, South Bend, Ind., architects. It will be one-story, 110 x 350 feet, with steam power plant, and one-story and basement office building, 50 x 100 feet, on adjoining site, reported to cost $125,000, with machinery. A list of equipment to be installed has been arranged.

Bridgeport, Pa.—The Continental Diamond Fibre Corporation has been organized, under Delaware laws, to take over and consolidate the Diamond State Fibre Company, with mill at Bridgeport, and the Continental Fibre Company, with plant at Newark, Del., and branch mill at Chicago, Ill. The merged organization plans to maintain present mills in service and is projecting an expansion program for enlarged output. J. M. Taylor is president of the Bridgeport organization and will be one of the heads of the consolidated company; J. P. Wright is president of the Newark company.

Hoboken, N. J.—The Best Made Paper Box Company, 124 Wooster street, has leased property at 1405-7 Clinton street, Hoboken, consisting of three-story factory, on site, 80 x 100 feet, and will remodel and equip for new plant to develop large increase in present output. The lease is for a term of years and company will take possession at once.

Plattsburg, N. Y.—The Hy-G Products, Inc., Plattsburg, recently organized by Gilbert R. Hughes, 924 Mathews avenue, Utica, N. Y., and associates, with capital of 2,000 shares of stock, no par value, is said to be planning the operation of local mill for the manufacture of paper specialties, including paper cups, plates, etc. Henry T. Dorrance and W. Chase Young, New Hartford, N. Y., are also interested in the organization.

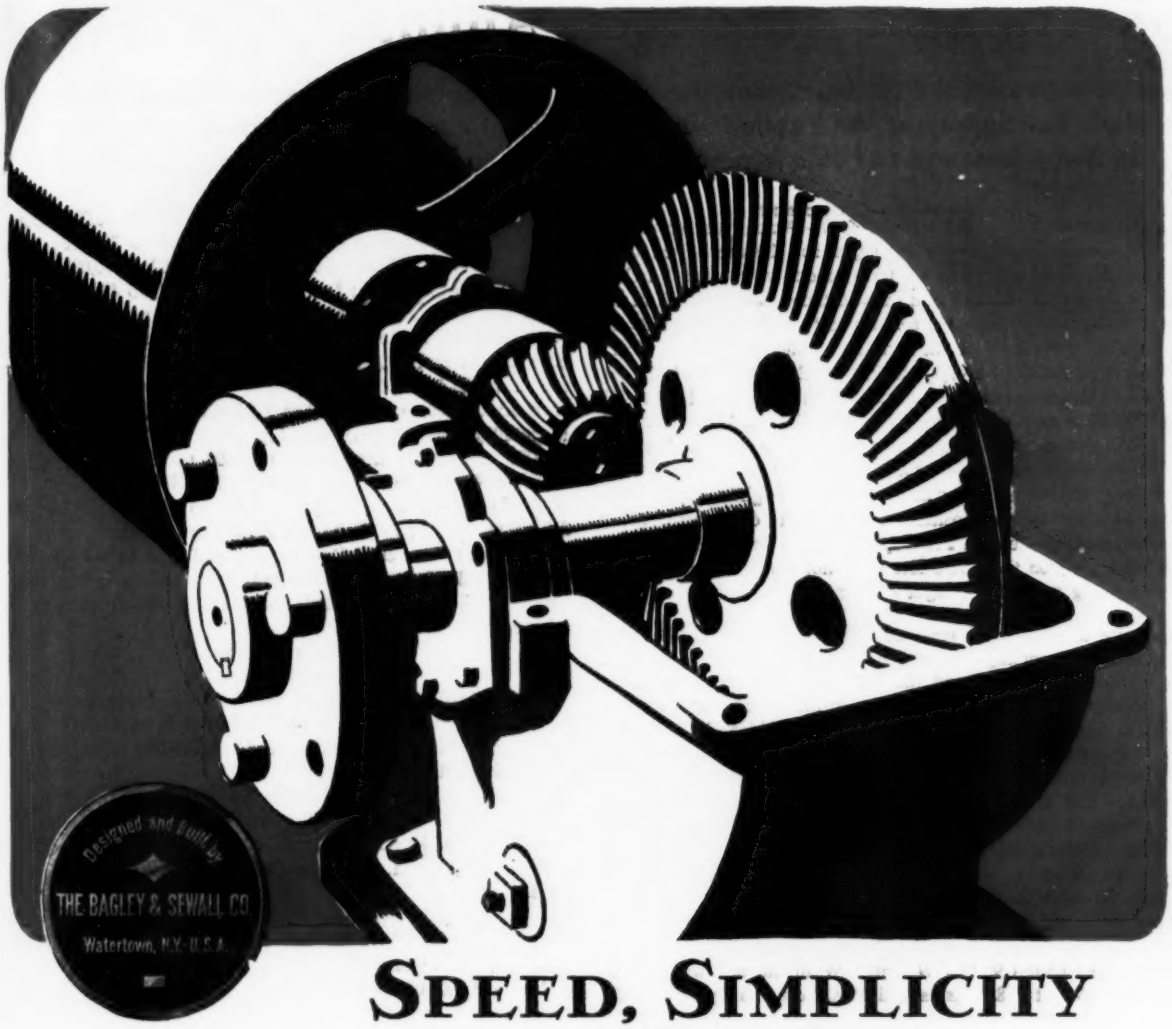
Chicago, Ill.—The Bermingham & Prosser Company, 106 North LaSalle street, paper goods, with branch at Kalamazoo, Mich., has concluded negotiations for the purchase of the four-story and basement mill type building at 120-28 South Sangamon street, 111 x 117 feet, heretofore owned by the Benjamin Electric Manufacturing Company. The structure has a total of about 55,000 square feet of floor space and was secured for a reported consideration of $140,000. Purchasing company will make alterations and improvements and will use structure for storage and distributing service; mechanical handling and other facilities will be installed.

Peshtigo, Wis.—The Badger Paper Mills, Inc., have been chartered under state laws and are reported to be planning operation of mill in the vicinity of Peshtigo. The new organization is represented by Charles B. Quarles, 490 Broadway, Milwaukee, Wis., attorney.

Lansing, Mich.—The Weissinger Paper Company, 201 North Hosmer street, recently organized with a capital of $75,000, will operate a wholesale paper business, and has leased a local building. Structure will be remodeled and equipped at once for storage and distributing service and extensive operations are planned. Fred J. Weissinger, formerly connected with the Dudley Paper Company, Lansing, is president of the new organization. J. G. Reutter is vice-president, and Floyd B. Harrington is secretary.

New York, N. Y.—The Park-Sunshine Folding Box Company, recently organized with a capital of $100,000, by Meyer Feinstein, 918 Avenue P, Brooklyn, and associates, is said to be planning early operation of local factory for the manufacture of paper boxes, folding cartons and other containers.

Hamilton, Ohio—The Black-Clawson Company, Second and Vine streets, manufacturer of paper mill machinery and parts, is said to be considering new addition to plant, estimated to cost more than $35,000, with equipment. It is understood that project will mature in the spring.



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Four dollars saved per ton of paper through increased production .....$1300 maintenance charges per machine eliminated, since a representative mill replaced old machine drives with Bagley & Sewall Drives. And more than economy — increased speed, smoother starting and running, complete freedom from chatter, vibration, backlash, broken teeth — performance that permits the machine tender to stick to his job of making paper! Compact, all-metal drives, with roller and ball bearings, magnetic or disc clutches, and a continuous oil bath. Let us modernize your drives, completely or in units, without interrupting production.

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The Bagley & Sewall Co.

Watertown, N.Y.

Government Announces Annual Paper Awards

Joint Congressional Printing Committee Rejects Fifteen Bids on Monday When Awards Are Made For Supplying the Public Printer With Paper for the Year Beginning March 1—In Many Instances the Bids Are Notably Lower Than Last Year—The Successful Firms

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 4, 1929.—Among the results of the bid openings and awards for paper for the use of the Government Printing Office for the term of one year from March 1, 1929, were fifteen rejections, in each instance being the bid of the lowest bidder or of the same amount as that on which the award was made. For the first time in the recollection of the writer, bids were received on every item in the schedule. The following items will be thrown into the open market: Lots 24 and 25, totalling 120,000 pounds of 100 per cent Book Wove, highest quality, for permanent records, which was a new item in the schedule, and on which there were seven bids. The requirements were for white rag; the lowest bid was that of the Virginia Paper Company, Inc., but the composition was noted as cable cord, which was not mentioned by the Printing Office as a possible constituent. The other bids on these two lots were notably higher, the differences varying as much as eight cents per pound.

Prices Notably Lower

In quite a number of instances, the quantities estimated for use during the coming year are in excess of the amount called for in the present year, and the prices, in very many instances, are notably lower. Standard news print is awarded at 3.02 cents as against 3.29 cents in 1928, the bidder, in each instance, being the Hudson Trading Company. The machine-finish book numbers vary from .02 of a cent to .80 of a cent under the prices for last year, every item being lower than in 1928. The only instances in which prices will be higher than in 1928 are the 50 per cent rag light-weight high machine-finish book paper, in which the prices increased from 9.92 to 10.10 cents and the quantity from 100,000 to 125,000 pounds. Single-coated book paper—7.30 cents as against 7.2295 cents. Double-coated book paper—7.687 cents as against 7.6175 cents. Colored mimeograph paper jumped from 6.99 to 7.59 cents. White sulphite writing No. 26 was awarded at 6.48 cents as against 6.37 cents last year; No. 32 of the same paper is awarded at 6.03 cents as against 5.87 cents; Nos. 40 and 48 of the same grade at 5.85 cents as against 5.77 cents; colored sulphite writing shows an increase from 7.81 cents to 7.98 cents. 100 per cent colored manifold is awarded at 40 cents as against 36.217 cents last year. 50 per cent rag white glazed manifold is awarded at 24.24 as against 22.89 cents last year.

Lots in which the awards are made at the same price as those for the current year include Lots Nos. 19 and 75. Instead of the entire award for 11,000,000 pounds of U. S. postal card bristol going to the Jessup & Moore Paper Company as in the last awards, at 4.92 cents per pound, the award was split this year between the R. P. Andrews Paper Company and the Whitaker Paper Company in each instance at 4.83 cents.

Lots in Which Quantities Are Increased

Quantities have been increased over those for the present year in the following lots: Lot Nos. 7 and 8 from 1,300,000 to 1,500,000 pounds in each case; Lot No. 9 from 800,000 to 1,000,000 pounds; Lot No. 13 from 15,000 to 50,000 pounds; Lot No. 20 from 100,000 to 125,000 pounds; Lots Nos. 29 and 30 each from 800,000 to 900,000; Lot No. 23 from 25,000 to 50,000; Lot No. 44 from 25,000 to 200,000; Lot No. 56 from 1,000,000 to 1,200,000; Lot No. 58 from 160,000 to $250,000; Lot No. 64 from 10,000 to 15,000; Lot No. 66 from 110,000 to 150,000; Lot No. 67 from 10,000 to 40,000; Lot No. 70 from 80,000 to 150,000; Lot No. 75 from 12,000 to 15,000; No. 109 from 150,000 to 250,000; Lot 110 from 750,000 to 800,000; Lots 115 and 116 from 300,000 to 350,000; Lot 151 from 30,000 to 50,000; Lot 160 from 70,000 to 100,000; Lot 165 from 15,000 to 40,000; Lot 190 from 50,000 to 100,000; Lot 201 from 170,000 to 200,000; Lot 210 from 450,000 to 550,000; Lot 212 from 60,000 to 80,000; Lot 221 from 100,000 to 150,000; Lot 224 from 200,000 to 400,000; Lot 226 from 80,000 to 200,000; Lot 227 from 80,000 to 100,000; Lot 352 from 6,000 pounds to 300,000 sheets; Lot 402 from 500,000 to 700,000; Lot 407 from 680,000 to 700,000. On the other hand, decreases are shown in Lot 6 from 2,500,000 pounds to 800,000 pounds; Lot 16 from 400,000 to 300,000; Lot 18 from 75,000 to 50,000; Lot 23 from 100,000 to 75,000; Lot 57, white sulphite writing, from 120,000 to 100,000; Lot 76 from 90,000 to 75,000; Lot 83 from 60,000 to 40,000; Lot 102 from 500,000 to 400,000; Lot 104 from 50,000 to 25,000; Lot 219 from 300,000 to 250,000; Lot 307 from 250,000 to 200,000; Lot 310 from 150,000 to 100,000.

The new items included Lots 15, on which an award was made; Lots 24 and 25, on which all bids were rejected; Lot 205, on which all bids were rejected; Lot 225, on which all bids were rejected.

The Awards

PRINTING PAPER

No. 1—2,500,000 pounds Standard News Print Paper; basis 24 x 36 inches, 64 pounds. Rolls, 24, 36 and 48 inches wide (3-inch fibre cores, with metal ends: Hudson Trading Company, New York, 3.02 cents.

MACHINE-FINISH BOOK

No. 3—500,000 pounds Machine Finish Book Paper; basis 25 x 38 inches, 70 pounds. Flat, cut 24 x 32, 28 x 38, and 31¼ x 45½ inches: P. H. Glatfelter Company, Spring Grove, Pa., 5.32 cents.

No. 4—1,000,000 pounds Ditto, basis, 25 x 38 inches, 70 pounds. Flat, cut 24 x 38 and 38 x 48 inches: P. H. Glatfelter Company, 5.32 cents.

No. 5—1,000,000 pounds Ditto; basis 25 x 38 inches, 70 pounds. Flat, cut 24 x 38 and 38 x 48 inches: P. H. Glatfelter Company, 5.24 cents.

No. 6—800,000 pounds Ditto; basis 25 x 38 inches, 70 pounds. Rolls, 18, 21 and 23 inches wide (3-inch cores): P. H. Glatfelter Company, 5.18 cents.

No. 7—1,500,000 pounds Ditto; basis 25 x 38 inches, 70 pounds. Rolls 19 and 38 inches wide (3-inch iron cores): P. H. Glatfelter Company, 5.18 cents.

No. 8—1,500,000 pounds Ditto; basis 25 x 38 inches, 70 pounds. Rolls 19 and 38 inches wide (3-inch iron cores): P. H. Glatfelter Company, 5.12 cents.

No. 9—1,000,000 pounds Ditto; basis 25 x 38 inches, 70 pounds. Rolls, 24, 36 and 48 inches wide (3-inch iron cores): P. H. Glatfelter Company, 5.18 cents.

No. 10—300,000 pounds Ditto; basis, 25 x 38 inches, 80 pounds. Rolls, 32 inches wide (3-inch iron cores) :Reese & Reese, Baltimore, Md., 5.00 cents.

No. 11—1,000,000 pounds Ditto; basis 25 x 38 inches, 80 pounds. Flat, cut 24 x 38, 33¾ x 64, and 38 x 48 inches: Reese & Reese, 5.05 cents.

No. 12—500,000 pounds Ditto; basis 25 x 38 inches, 100 pounds. Flat, cut 22¼ x 32¼, 24 x 38, 24¼ x 36¼, 32 x 42, 38 x 48 and 41 x 52 inches: Reese & Reese, 5.00 cents.

No. 13—50,000 pounds Ditto; basis 25 x 38 inches, 120 and 140 pounds. Flat, cut 24 x 30 (grain as ordered), 29 x 41, and 38 x 48 inches. Minimum Order 7,500 pounds: Reese & Reese, 5.20 cents.

Your Paper Is Made In Your Beaters.

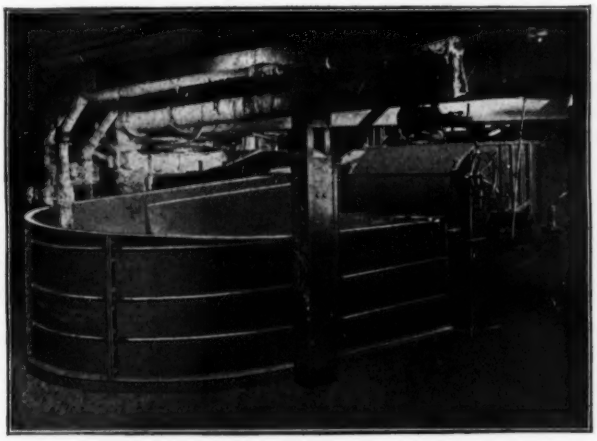
ask— Mr. Hollingsworth

The Oswego Falls Corporation, (makers of the famous Sealright Containers) use Dilts New Type Beating Engines in both their Fulton and Skaneateles, N. Y., mills.

On sulphite pulp their Dilts New Type Beaters rated at 2,000 lbs. each are regularly loaded with 3,000 lbs. which they circulate rapidly at 6½% density, and beat evenly and uniformly.

One large New Type Breaker Beater with extractor hood handles continuously the ground wood from the pulp mill, saving tremendously on labor.

In fact, all their Dilts New Type Beaters are so satisfactory and such a decided improvement over their former Beaters, that we suggest you "ask Mr. Hollingsworth."



View of Dilts New Type Beaters in Oswego Falls Mill

We Can Rebuild Your Beaters to the Dilts New Type

—Dilts—
MACHINE WORKS, Inc. FULTON, N.Y.
EXPORT OFFICE - 15 PARK ROW - NEW YORK CITY

Your Paper Is Made In Your Beaters.

No. 14—50,000 pounds Ditto, Colored, blue and salmon; basis 25 x 38 inches, 70 and 100 pounds. Flat, cut 25 x 38 inches and 38 x 48 inches. Minimum order, one color, 5,000 pounds: Allied Paper Mills, Kalamazoo, Mich., 7.183 cents.

MACHINE-FINISH BOOK

For use on Monotype Machines

No. 15—90,000 pounds Machine-finish Book Paper for use on monotype machines; basis, 25x38 inches, 100 pounds, Rolls, 27 inches wide (3-inch iron cores): Barton, Duer & Koch Paper Company, Washington, D. C. 5.30 cents.

MACHINE-FINISH BOOK END PAPER

No. 17—80,000 pounds Machine-Finish Book End Paper for Waste Leaves, Flat, 25 x 38 inches, 160 pounds; the grain to run the 38-inch way: R. P. Andrews Paper Company, Washington, D. C., 5.83 cents.

ANTIQUE PAPER

No. 18—50,000 pounds Antique Book Paper; basis, 25x38 inches, 100 pounds, Flat, cut 25x38 and 38x50 inches: Reese & Reese, 5.20 cents.

LIGHT WEIGHT MACHINE-FINISH BOOK

No. 19—50,000 pounds Light Weight Machine-Finish Book Paper; basis 25x38 inches, 60 pounds, Flat, cut 32x48 and 38x48 inches: P. H. Glatfelter Company, 6.99 cents.

50% RAG LIGHT WEIGHT HIGH MACHINE-FINISH BOOK

No. 20—125,000 pounds 50 per cent Rag Light Weight High Machine-Finish Book Paper; basis, 25x38 inches, 60 pounds, Flat, cut 32x48 and 38x48 inches: Whitaker Paper Company, Baltimore, Md., 10.10 cents.

50% RAG MACHINE-FINISH BOOK

No. 21—80,000 pounds 50 per cent Rag Machine-Finish Book Paper; basis, 25x38 inches, 80 pounds, Flat, cut 32x48 inches: Allied Paper Mills, 8.86 cents.

No. 22—350,000 pounds Ditto, basis 25x38 inches, 80 pounds, Flat, cut 38x48 inches: Atlantic Paper Company, Philadelphia, Pa., 8.79 cents.

No. 23—75,000 pounds Ditto; basis 25x38 inches, 80 and 90 pounds, Flat, cut any size, minimum width 24 inches, maximum width 42 inches: Allied Paper Mills, 8.86 cents.

100% RAG BOOK WOVE

Highest Quality, for Permanent Records

No. 24—40,000 100 per cent Rag Book Paper, wove, machine finish; basis 25x38 inches, 90 pounds, Flat, cut 38x48 inches; the grain to run lengthwise of the Sheet: Bids Rejected.

No. 25—80,000 pounds Ditto, Antique finish; basis 25x38 inches, 140 pounds, Flat, cut 38x48 inches; the grain to run lengthwise of the sheet: Bids Rejected.

SUPERCALENDERED BOOK

No. 26—70,000 pounds Supercalendered Book Paper; basis, 25x38 inches, 90 pounds, Flat, cut 32x48 inches, Minimum order 15,000 pounds: Reese & Reese, 5.37 cents.

No. 27—550,000 pounds Ditto; basis, 25x38 inches, 90 pounds, Flat, cut 31½x45½ inches: Reese & Reese, 5.32 cents.

No. 28—1,000,000 pounds Ditto; basis, 25x38 inches, 90 pounds, Fla., cut 24x38 and 38x48 inches: Reese & Reese, 5.32 cents.

No. 29—900,000 pounds Ditto; basis, 25x38 inches, 90 pounds, Rolls, 38 inches wide (3-inch iron cores): Reese & Reese, 5.12 cents.

No. 30—900,000 pounds Ditto; basis, 25 x 38 inches, 90 pounds. Rolls, 38 inches wide (3-inch iron cores) Reese & Reese, 5.12 cents.

No. 31—40,000 pounds Ditto; basis 25x38 inches, 90 and 100 pounds. Flat, cut any size, minimum width 24 inches, maximum width 42 inches, Minimum order, one weight, 20,000 pounds; P. H. Glatfelter Company, 5.44 cents.

50 PER CENT RAG SUPERCALENDERED BOOK

No. 33—50,000 pounds 50 per cent Rag Supercalendered Book Paper; basis 25x48 inches, 80 and 90 pounds, Flat, cut 32x48 inches. Minimum order, one weight, 12,500 pounds: Allied Paper Mills, 9.78 cents.

HALF-TONE PAPER (BOOK)

No. 34—180,000 pounds Half Tone Book Paper; Basis, 25x38 inches, 140 pounds, Flat, cut 24x38 and 38x48 inches: International Paper Company, New York, 5.30 cents.

SINGLE-COATED BOOK

No. 35—500,000 pounds Single-Coated Book Paper; basis, 25x38 inches, 140 and 160 pounds, Flat, cut 24x32 inches, 24x8, and grain to run lengthwise of the sheet: Virginia Paper Company, Inc., Washington, D. C., 7.30 cents.

DOUBLE-COATED BOOK

No. 36—150,000 pounds Double-coated Book Paper; bases, 25x38 inches, 140 and 160 pounds, Flat, cut 24x32 inches, 24x38, and 38x48 inches; the grain to run lengthwise of the sheet: Allied Paper Mills, 7.687 cents.

50 PER CENT RAG DOUBLE-COATED BOOK

No. 37—100,000 pounds 50 per cent Rag Double-Coated Book Paper; basis, 25x38 inches, 140 and 160 pounds, Flat, cut 24x32, 24x38, 32x42, 38x42, 38x48, and 41x52 inches; the grain to run lengthwise of the sheet: Old Dominion Paper Company, Norfolk, Va., 11.929 cents.

MACHINE-FINISH LITHOGRAPH PAPER

No. 39—70,000 pounds Machine-Finish, Lithograph Paper; basis, 25x38 inches, 160 pounds, Flat, cut 19x24 and 24x38 inches; the grain to run lengthwise of the sheet: R. P. Andrews Paper Company, 6.27 cents.

50 PER CENT RAG SUPERCALENDERED LITHOGRAPH PAPER

No. 40—100,000 pounds 50 per cent Rag Supercalendered Lithograph Paper; basis 25x38 inches, 160 pounds, Flat, cut 26x38 inches; the grain to run lengthwise of the sheet: R. P. Andrews Paper Company, 9.52 cents.

MIMEOGRAPH PAPER

No. 41—80,000 pounds Ground Wood Mimeograph Paper; basis, 25x38 inches, 76 pounds, Flat, cut 24½x30½, 24½x32, 24½x38, and 26x42½ inches; the grain to run lengthwise of the sheet: Bids Rejected.

No. 43—1,400,000 pounds White Chemical Wood Mimeograph Paper, Nos. 40 and 48, Flat, cut 24½x30½, 24½x38, and 26x42½ inches; the grain to run lengthwise of the sheet; Jessup & Moore Paper Company, Philadelphia, Pa., 5.10 cents.

No. 44—200,000 pounds Colored Mimeograph Paper, blue, buff, green, pink and yellow, No. 40, Flat, cut 24½x30½, 24½x32, 24½x38, and 26x42½ inches; the grain to run lengthwise of the sheet, Minimum order, one color, 5,000 pounds: American Writing Paper Company, Inc., Holyoke, Mass., 7.59 cents.

30 PER CENT RAG MIMEOGRAPH

No. 47—1,000,000 pounds 30 per cent Rag White Mimeograph Paper, Nos. 40 and 48, Flat, cut 24½x30½, 24½x32, 24½x38, 26x42½, and 28½x34½ inches; the grain to run lengthwise of the sheet: Atlantic Paper Company, 7.49 cents.

WRITING PAPER

Blue, U. S. M. O. Safety Writing, Safety or Sensitive Design

No. 51—700,000 pounds Blue U. S. M. O. Safety Writing Paper, No. 32, Rolls, 11 and 22 inches wide, 24 inches in diameter (3-inch cores): R. P. Andrews Paper Company, 9.57 cents.

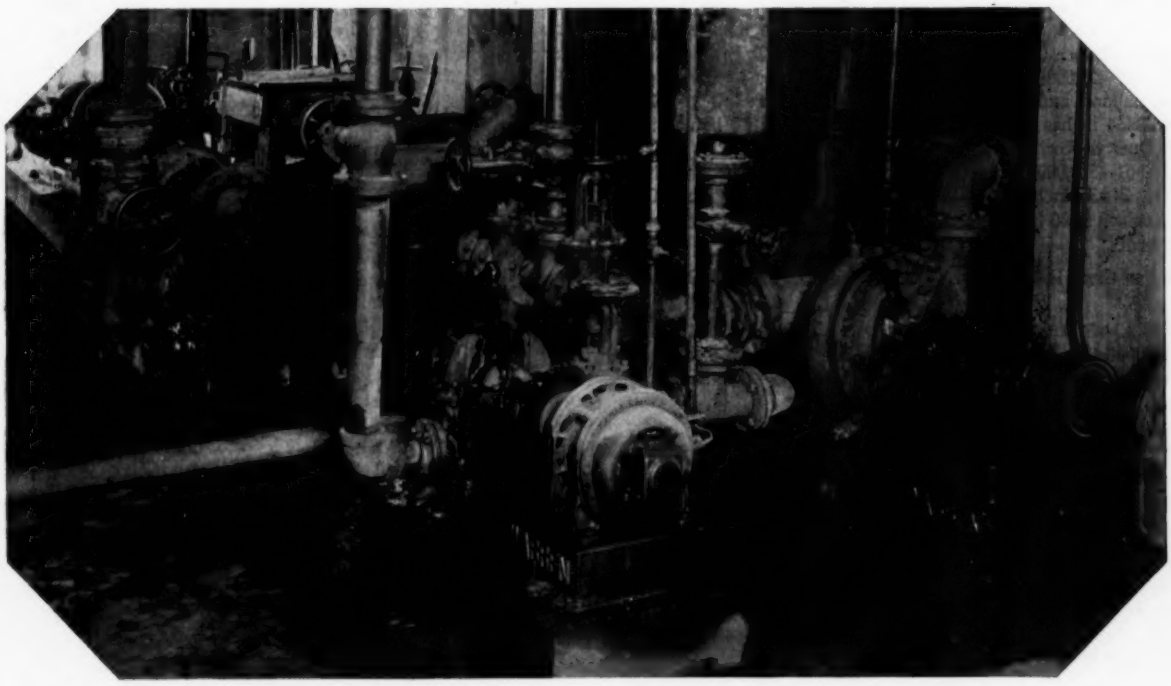
U. S. M. O. WRITING, WHITE AND BLUE

No. 52—20,000 pounds White and Blue U. S. M. O. Writing Paper, No. 32, Rolls, 8½ inches wide, 24 inches in diameter (3-inch cores); Minimum order, either color, 4,000 pounds: R. P. Andrews Paper Company, 9.27 cents.

SAFETY WRITING PAPER, COLORED

No. 53—5,000 pounds Colored Safety Writing Paper, blue, gray, green, pink, salmon and yellow, No. 40, Flat, cut 17x28, 21x32, and 22x34 inches; Minimum order, one color, 1,000 pounds: R. P. Andrews Paper Company, 13.67 cents.

Why do most new mills select Warren Pumps?



Battery of six 4" and 5" liquor and clear water pumps in a new southern paper mill.

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Sulphite Writing, White and Colored

No. 55—800,000 pounds White Sulphite Writing Paper, No. 32, Flat, cut 21x32, 22x34, 26x34½, 28x34, and 32x42 inches: Old Dominion Paper Company, 6.274 cents.

No. 56—1,200,000 pounds Ditto, Nos. 40 and 48, Flat, Cut 21x32, 22x34, 23x36, 24x38, 28x34 and 32x42 inches: Old Dominion Paper Company, 6.179 cents.

No. 57—100,000 pounds Ditto, No. 26, Rolls, minimum width 16 inches, maximum width 24 inches (3-inch cores): Whitaker Paper Company, 6.48 cents.

No. 58—250,000 pounds Ditto, No. 32, Rolls, Minimum width 16 inches; maximum width 32 inches (3-inch cores); Minimum order, 10,000 pounds: Barton, Duer & Koch Paper Company, 6.03 cents.

No. 59—120,000 pounds Ditto, Nos. 40 and 48, Rolls, Minimum width 16 inches, maximum width 32 inches (3-inch cores): Jessup & Moore Paper Company, Philadelphia, Pa., 5.10 cents.

No. 60—25,000 pounds Colored Ditto, blue, buff, cherry, green, pink, salmon and yellow, No. 26, Flat, cut 21x32, 22x34, 24x38, and 28x34 inches; Minimum order, one color, 5,000 pounds: Barton, Duer & Koch Paper Company, 7.98 cents.

No. 61—550,000 Ditto, Nos. 32 and 40, Flat cut 21 x 32 inches, 22x34, 24x38 inches, 28x34, and 32x42 inches; Minimum Order, one color, 5,000 pounds: Aetna Paper Company, Dayton, Ohio, 6.66 cents.

100 Per Cent Rag, White Writing, Vellum Finish, Tub Sized, Air-Dried

No. 63—5,000 pounds 100 per cent Rag White Writing Paper, Vellum Finish, Tub-sized, air-dried, No. 56, Flat, cut 21x32 inches; Minimum order 2,500 pounds: Barton, Duer & Koch Paper Company, 20.77 cents.

Map Paper

No. 64—15,000 pounds Lithograph-finish Map Paper, Nos. 32 and 40, Flat, cut 24x38, 30x40, 32x48, 36x52, and 38x48 inches; Minimum order, one substance, 5,000 pounds: American Writing Paper Company, Inc., 9.92 cents.

50 Per Cent Rag Lithograph-Finish Map, Tub-Sized, Air-Dried

No. 65—200,000 pounds 50 per cent Rag Lithograph-Finish Map Paper, Tub-Sized, Air-Dried, Nos. 40, 48, and 56. Flat cut 36x44, 36x52, 38x44, 38x48, 40x52, 41x50, and 44x46 inches; the grain to run lengthwise of the sheet: Virginia Paper Company, Inc., 11.8316 cents.

75 Per Cent Rag Lithograph-Finish Map, Tub-Sized, Air-Dried

No. 66—150,000 pounds 75 per cent Rag Lithograph-Finish Map Paper, Tub-Sized, Air-Dried, Nos. 32 and 40. Flat, cut 24x38, 30x40, 32x48, 36x52, 38x48, 40x52, and 44x64 inches; the grain to run lengthwise of the sheet: Barton, Duer & Koch Paper Company, 16.64 cents.

No. 67—40,000 pounds Ditto, Nos. 48 and 56. Flat, cut 38x44, 41 x 50, 44 x 54, and 44 x 64 inches; the grain to run lengthwise of the sheet. Minimum order, one substance, 5,000 pounds: Barton, Duer & Koch Paper Company, 16.64 cents.

100 Per Cent Rag White Chart Paper, Lithograph-Finish, Tub-Sized, Air-Dried

No. 69—250,000 pounds 100 per cent Rag White Chart Paper, Lithograph-Finish, Tub-Sized, Air-Dried. No. 96. Flat, cut any size minimum width 22 inches, maximum width 46 inches; the grain to run lengthwise of the sheet unless otherwise specified: All orders to be placed on basis of 1000 sheet unit: R. P. Andrews Paper Company, 24.49 cents.

Manifold Paper

No. 70—150,000 pounds White Sulphite Manifold Paper, No. 18. Flat, cut 17x28, 19x24, 21x32, and 22x34 inches; the grain to run 21-inch way on 21x32-inch size: Old Dominion Paper Company, 8.347 cents.

No. 71—50,000 pounds Colored Ditto, blue, buff, cherry, green, pink, salmon and yellow, No. 18. Flat, cut 17x28, 19x24, 21x32, and 29x34 inches; the grain to run 21-inch way on 21x32 inch size. Minimum order, one color, 5,000 pounds: Import Paper Company, Chicago, Ill., 9.25 cents.

50 Per Cent Rag, Manifold, White and Colored

No. 73—50,000 pounds 50 per cent Rag White Manifold Paper, No. 14. Flat, cut 17x28, 19x24, 21x32, and 22x34 inches; the grain to run 21-inch way on 21x32 inch size: Barton, Duer & Koch Paper Company, 19.10 cents.

No. 74—350,000 pounds Ditto, No. 18. Flat, cut 17x28, 21x32, 22x34 and 24x38 inches; the grain to run 21-inch way on 21x32-inch sheet: R. P. Andrews Paper Company, 16.25 cents.

No. 75—15,000 pounds Colored Ditto, blue, buff, cherry, green, pink, salmon and yellow, No. 14. Flat, cut 17x28, 19x24, 21x32, and 22 x 34 inches; the grain to run 21-inch way on 21x32-inch size. Minimum order, one color, 3,000 pounds; Barton, Duer & Koch Paper Company, 21.35 cents.

No. 76—75,000 pounds Ditto, No. 18. Flat, cut 17x28, 21x32, 22x34, and 24x38 inches; the grain to run 21-inch way on 21x32 inch size. Minimum order, one color, 5,000 pounds: Barton, Duer & Koch Paper Company, 18.50 cents.

100 Per Cent Rag Manifold, White and Colored, Tub Sized, Air-Dried

No. 78—35,000 pounds 100 per cent Rag White Manifold Paper, Tub-Sized, Air-Dried, No. 14. Flat, cut 17x28 inches, 19x24, 21x32, and 22x34 inches; the grain to run the 21-inch way on 21x32 inch size. Minimum order 5,000 pounds: Old Dominion Paper Company, 37.214 cents.

No. 79—25,000 pounds Ditto, No. 18. Flat, cut 17x28, 19x24, 21x32, and 22x34 inches; the grain to run the 21 inch way on 21x32 inch size. Minimum order 5,000 pounds: Old Dominion Paper Company, 31.463 cents.

No. 80—20,000 pounds Colored Ditto, blue, buff, cherry, green, pink, salmon and yellow, No. 14. Flat, cut 17x28, 19x24, 21x32, 22x34, and 26x32 inches; the grain to run the 21-inch way on 21x32 inch size. Minimum order, one color, 3,000 pounds: Esleek Manufacturing Company, Turners Falls, Mass., 40.00 cents.

No. 81—25,000 pounds Ditto, No. 18. Flat, cut 17x28, 21x32, 22x34 and 24x38 inches; the grain to run 21-inch way on 21x32-inch size. Minimum order, one color, 5,000 pounds: Whitaker Paper Company, 34.50 cents.

50 Per Cent Rag White Glazed Manifold

No. 83—40,000 pounds Rag White Glazed Manifold Paper, No. 16. Flat, cut 19x24 and 21x32 inches; the grain to run the 21-inch way on 21 x 32-inch size. Minimum order 10,000 pounds: Dobler & Mudge, Baltimore, Md., 24.24 cents.

Bond Paper

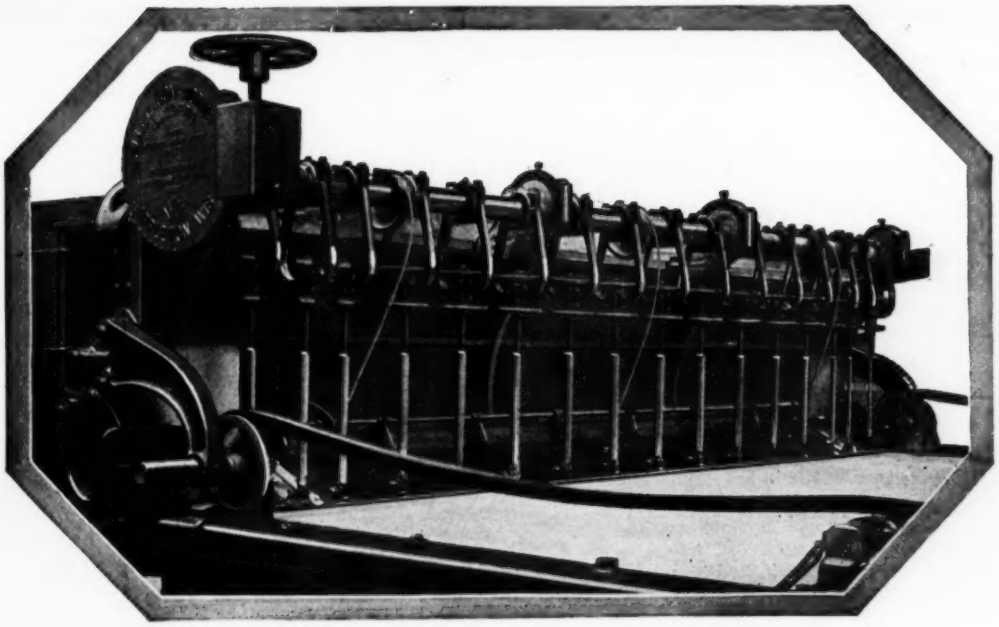
No. 101—25,000 pounds White Sulphite Bond Paper, No. 26. Flat, cut any size. Minimum width 17 inches, maximum width 32 inches. Minimum order 5,000 pounds: Walker-Goulard-Plehn Company, New York, 6.85 carlots; 7.15 less carlots.

No. 102—400,000 pounds Ditto, Nos. 32 and 40. Flat, cut any size, minimum width 17 inches, maximum width 32 inches: Cauthorne Paper Company, Inc., Richmond, Va., 200,000 pounds, 6.57 cents. Barton, Duer & Koch Paper Company, 200,000 pounds, 6.57 cents.

No. 103—10,000 pounds Ditto, No. 48. Flat, cut any size, minimum width 17 inches, maximum width 32 inches minimum order, 5,000 pounds: R. P. Andrews Paper Company, 6.67 cents.

No. 104—25,000 pounds Colored Ditto, blue, buff, cherry, green, pink, salmon and yellow: Nos. 32 and 40. Flat, cut any size, minimum width 17 inches, maximum width 32 inches minimum order, one color 5,000 pounds: Aetna Paper Company, 7.47 cents.

No. 105—10,000 pounds Colored Ditto, No. 48. Sizes as above. Minimum order, one color, 2,000 pounds: Aetna Paper Company, 7.47 cents.



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With the Voith Stock Inlet operating on either the Straight Fourdrinier, Harper or Yankee machines, items of operating expense can be reduced to help you reach minimum production costs.

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30 PER CENT RAG BOND, WHITE AND COLORED, TUB-SIZED, AIR DRIED

No. 109—250,000 pounds 30 per cent Rag White Bond Paper, Tub-Sized, Air-Dried, No. 26. Flat, cut 21x32, 23x36, 24x38, and 28x34 inches: Aetna Paper Company, 11.37 cents.

No. 110—800,000 pounds Ditto, No. 32. Flat, cut any size, minimum width 17 inches, maximum width 32 inches: Aetna Paper Company, 10.26 cents.

No. 111—850,000 pounds Ditto, No. 40. Flat, cut any size, minimum width 17 inches. Maximum width 32 inches: Aetna Paper Company, 8.88 cents.

No. 112—850,000 pounds Ditto, No 40. Flat, cut any size, minimum width 17 inches, maximum width, 32 inches: Aetna Paper Company, 8.88 cents.

No. 113—900,000 pounds Ditto, No. 48. Flat, cut any size, minimum width 17 inches, maximum width, 32 inches: Aetna Paper Company, 8.88 cents.

No. 114—50,000 pounds Colored Ditto, blue, buff, cherry, green, pink, salmon and yellow, No. 26. Flat, cut any size, minimum width 17 inches; Maximum width 32 inches. Minimum order, one color, 3,000 pounds: Aetna Paper Company, 14.91 cents.

No. 115—350,000 pounds ditto, No. 32. Flat, cut any size, minimum width 17 inches; maximum width, 32 inches: Aetna Paper Company, 10.91 cents.

No. 116—350,000 pounds Colored Ditto, No. 40. Flat, cut any size, minimum width 17 inches, maximum width 32 inches: Aetna Paper Company, 9.81 cents.

No. 117—250,000 pounds Ditto, Colored, No. 48. Flat, cut any size, minimum width 17 inches, maximum width 32 inches: Aetna Paper Company, 9.81 cents.

50 PER CENT RAG BOND, WHITE AND COLORED, TUB-SIZED, AIR-DRIED

No. 120—50,000 pounds 50 per cent Rag White Bond Papers, Tub-Sized, Air-Dried No. 26. Flat, cut 21x32 inches, 23x36, 24x38, and 28x34 inches: Dobler & Mudge, 13.97 cents.

No. 121—750,000 pounds Ditto, Nos. 32 and 40. Flat, cut any size, minimum width 17 inches, maximum width 32 inches: Aetna Paper Company, 11.71 cents.

No.122—80,000 pounds Ditto, No. 48. Flat, cut any size, minimum 17 inches, maximum width 32 inches: Aetna Paper Company, 11.71 cents.

No. 123—15,000 pounds Colored Ditto, blue, buff, cherry, green pink, salmon and yellow, Nos. 32 and 40. Flat, cut any size, minimum width 17 inches, maximum width 32 inches. Minimum order, one color, one substance, 2,500 pounds: Dobler & Mudge, 13.97 cents .

75 PER CENT RAG, WHITE BOND, TUB-SIZED, AIR-DRIED

No. 125—6,000 pounds 75 per cent Rag White Bond Paper, Tub-Sized, Air-Dried, No. 26. Flat, cut any size, minimum width 17 inches, maximum width 32 inches. Minimum order 2,500 pounds: Barton, Duer & Koch Paper Company, 17.75 cents.

No. 126—10,000 pounds Ditto, Nos. 32, 40 and 48. Flat, cut any size, minimum width 17 inches, maximum width 32 inches. Minimum order, one substance, 2,500 pounds: Barton, Duer & Koch Paper Company, 17.53 cents.

100 PER CENT RAG WHITE BOND, TUB-SIZED, AIR-DRIED

No. 128—10,000 pounds 100 per cent Rag White Bond Paper, Tub-Sized, Air-Dried, Nos. 32 and 40. Flat, cut any size, minimum width 17 inches, maximum width 32 inches. Minimum order, one substance, 2,000 pounds: Barton, Duer & Koch Paper Company, 24.60 cents.

No. 129—4,000 pounds Ditto, No. 48. Flat, cut any size, minimum width 17 inches, maximum width 32 inches. Minimum order, 2,000 pounds: Barton, Duer & Koch Paper Company; 24.60 cents.

DECLARATION BOND, TUB-SIZED, AIR-DRIED

No. 130—12,000 pounds Declaration Bond Paper, Tub-sized, Air-dried, Nos. 32 and 40. Flat, cut 17x22 and 22x25½ inches. Minimum order, one substance, 3,000 pounds: Barton, Duer & Koch Paper Company; 26.00 cents.

PARCHMENT DEED, WHITE AND CREAM, TUB-SIZED, AIR-DRIED

No. 131—4,000 pounds White and Cream Parchment Deed Paper, Tub-sized, Air-dried, No. 64. Flat, cut 33x34 inches. Minimum order, 2,000 pounds: Barton, Duer & Koch Paper Company; 26.70 cents.

LEDGER PAPER

No. 151—50,000 pounds White Sulphite Ledger Paper, Nos. 56 and 64. Flat, cut any size, minimum width 17 inches, maximum width 32 inches. Minimum order, one substance, 5,000 pounds: Cauthorne Paper Company, Inc.; 7.36 cents.

No. 152—60,000 pounds Ditto, No. 80. Flat, cut as above. Minimum order, 5,000 pounds: Cauthorne Paper Company, Inc.; 7.36 cents.

No. 153—10,000 pounds Colored Ditto, No. 80. Flat, cut 21x32½ inches. Minimum order, one color, 2,000 pounds: Import Paper Company, 9.00 cents.

30 PER CENT RAG LEDGER, WHITE AND COLORED, TUB-SIZED, AIR-DRIED

No. 154—40,000 pounds 30 per cent White Ledger Paper, Tub-sized, Air-Dried, Nos. 48 and 56. Flat, cut 20x28, 21x32, 24x38, 28x29, and 28x34 inches. Minimum order, one substance, 5,000 pounds: Barton, Duer & Koch Paper Co.; 10.69 cents.

No. 155—30,000 pounds Ditto, No. 64. Flat, cut 21x32 and 23x36. Minimum order, 5,000 pounds: Barton, Duer & Koch Paper Company; 10.69 cents.

No. 156—40,000 pounds Ditto, No. 72. Flat, cut 20x28, 21x32, 24x38, and 28x34 inches. Minimum order, 5,000 pounds: Barton, Duer & Koch Paper Company; 10.69 cents.

No. 157—30,000 pounds Colored Ditto blue, buff, green, pink, salmon and yellow. Nos. 56, 64 and 72. Flat, cut 21x32, 23x36, 24x38, and 28x34 inches. Minimum order, one substance, one color, 3,000 pounds: Barton, Duer & Koch Paper Company; 12.33 cents.

50 PER CENT RAG LEDGER, WHITE AND COLORED, TUB-SIZED, AIR-DRIED

No. 160—100,000 pounds 50 per cent Rag White Ledger Paper Tub-sized, Air-dried, Nos. 48 and 56. Flat, cut 18½x36, 18½x40¼, 20x28, 21x32, 24x38, 28x29, and 28x34 inches. Minimum order, one substance, 5,000 pounds: Virginia Paper Company, Inc.; 12.18 cents.

No. 161—60,000 pounds Ditto, No. 64. Flat, cut 21x32 and 23x36 inches. Minimum order, 5,000 pounds: Virginia Paper Company, Inc.; 12.18 cents.

No. 162—80,000 pounds Ditto, Nos. 72 and 80. Flat, cut 20x28, 21x32, 24x38, and 28x34 inches: Virginia Paper Company, Inc.; 12.18 cents.

No. 163—25,000 pounds Ditto, No. 88. Flat, cut 21x32½ inches. Minimum order, 5,000 pounds: Virginia Paper Company, Inc.; 12.18 cents.

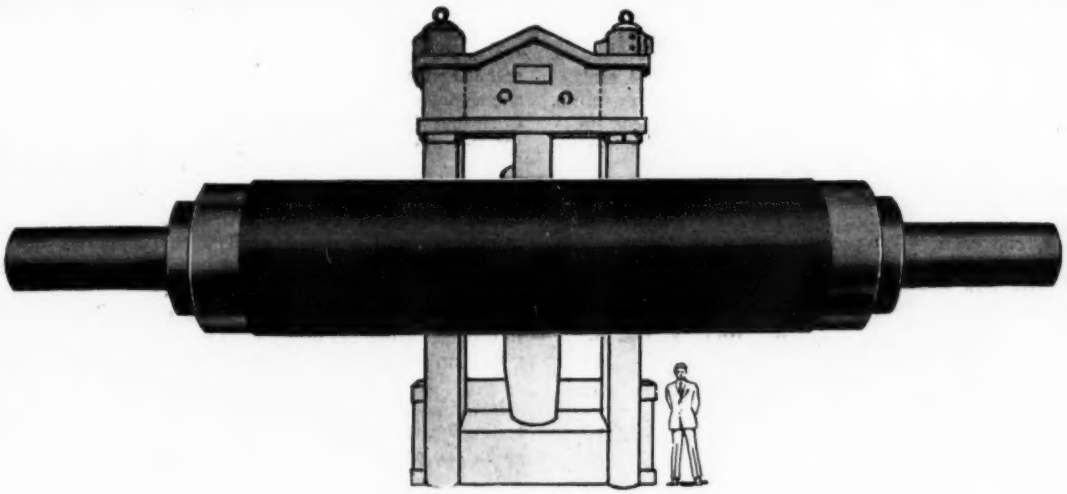
No. 164—50,000 pounds colored Ditto, blue, buff, cherry, green, pink, salmon and yellow, Nos. 56, 64 and 72. Flat, cut 18½x36, 18½x40¼, 19x24, 21x32, 23x36, and 28x34 inches. Minimum order, one substance, one color, 3,000 pounds: Virginia Paper Company, Inc.; 12.677 cents.

No. 165—40,000 pounds Ditto, blue, buff, cherry, fawn, green, pink, salmon and yellow, No. 88. Flat, cut 21x32½ inches. Minimum order, one color, 5,000 pounds: Virginia Paper Company, Inc.; 12.677 cents.

75 PER CENT RAG LEDGER, WHITE AND COLORED, TUB-SIZED, AIR-DRIED

No. 168—30,000 pounds 75 per cent Rag White Ledger Paper, Tub-sized, Air-dried, Nos. 48 and 56. Flat, cut 21x32, 24x38, 28x29, and 28x34 inches. Minimum order, one substance, 5,000 pounds: Dobler & Mudge; 15.14 cents.

No. 169—60,000 pounds Ditto, No. 64. Flat, cut 21x32, 23x36, 24x38, and 28x34 inches. Minimum order, 5,000 pounds: Dobler & Mudge; 15.14 cents.



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PRESSURE in compressing the sheets that form the body of a paper roll determines to a great extent the wearing quality and length of service-life of the roll. Proper pressure in both weight and time produces the smooth solidity for which Waldron rolls are famous.

Because Waldron Rolls Last Longer— They Prove Most Economical To Use!

Every detail in the construction of Waldron Rolls is given maximum scientific care and attention by Engineering experts. The paper itself is thoroughly conditioned in special ovens for weeks before being pressed, to insure proper moisture content. This exact conditioning is necessary to attain the Waldron quality in finished roll.

The enormous pressure is maintained until all parts of the roll have reached proper hardness as revealed by rigid tests. Heads and shafts are perfectly proportioned for operating pressures. These and other important features of superior construction are revealed only in the greater number of operating hours that Waldron Rolls stand up in service.

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WALDRON
Paper Converting Machinery

No. 170—60,000 pounds Ditto, Nos. 72 and 80. Flat, cut 20x28, 21x32, 24x38, and 28x34 inches. Minimum order, one substance, 5,000 pounds: Dobler & Mudge; 15.14 cents.

No. 171—30,000 pounds Ditto, No. 88. Flat, cut 21x32½ inches. Minimum order, 5,000 pounds: Dobler & Mudge; 15.14 cents.

No. 172—50,000 pounds Colored Ditto, blue, buff, cherry, green, pink, salmon, and yellow, Nos. 56, 64 and 72. Flat, cut 19x24, 21x32, 23x36, and 28x34 inches. Minimum order, one substance, one color, 3,000 pounds: Dobler & Mudge; 15.96 cents.

No. 173—12,000 pounds Ditto, blue, buff, cherry, fawn, green, pink, salmon and yellow, No. 88. Flat, cut 21x32½ inches. Minimum order, one color, 4,000 pounds: Dobler & Mudge; 15.96 cents.

100 Per Cent Rag White Ledger, Tub-Sized, Air-Dried, For Permanent Records

No. 176—20,000 pounds 100 per cent Rag White Ledger Paper, Tub-sized, Air-dried, No. 48. Flat, cut 21x32, 22¾x31½, 23x36, 24x38, and 28x34 inches. Minimum order, 5,000 pounds: Barton, Duer & Koch Paper Company; 23.70 cents.

No. 177—20,000 pounds Ditto, No. 56. Flat, cut 20x28, 21x32, 23x36, 24x38 and 28x34. Minimum order, 5,000 pounds: Barton, Duer & Koch Paper Company; 23.70 cents.

No. 178—10,000 pounds 100 per cent Rag White Ledger Paper, Tub-sized, Air-dried, No. 64. Flat, cut 18½x42, 21x32, 23x36 and 28x34 inches. Minimum order, 5,000 pounds; Barton, Duer & Koch Paper Company; 23.70 cents. (White shirt cuttings, underwear clippings, unbleached muslin, white and unbleached shoe cuttings.)

No. 179—15,000 pounds Ditto, No. 72. Flat, cut 20x28, 21x32, 24x38, and 28x34 inches. Minimum order, 5,000 pounds: Barton, Duer & Koch Paper Company; 23.70 cents. (White shirt cuttings, underwear clippings, unbleached muslin, white and unbleached shoe cuttings.)

No. 180—8,000 pounds Ditto, No. 80. Flat, cut 21x32½ and 21x42 inches. Minimum order, 4,000 pounds: Carew Manufacturing Company, South Hadley Falls, Mass.; 23.74 cents. (New cotton cuttings from shirt and underwear factories.)

No. 181—50,000 pounds Ditto, No. 88. Flat, cut 20½x24¾, 21x32½, and 22¾x31½ inches. Minimum order, 5,000 pounds: Carew Manufacturing Company; 23.74 cents. (New cotton cuttings from shirt and underwear factories.)

Sulphite Index, White and Colored, Single-Ply

No. 184—100,000 pounds White Sulphite Index, bases 22½x28½ inches, 182 and 230 pounds. Flat, cut 21x32½, 22½x28½, and 24½x32½ inches, with projected colored-paper marker between each 100 sheets. Minimum order, one weight, 10,000 pounds: Cauthorne Paper Company, Inc.; 7.16 cents.

No. 185—5,000 pounds Ditto, bases 22½x28½, 280 and 362 pounds. Flat, cut 21x32½ and 22½x28½ inches. Markers as above. Minimum order, one weight, 2,500 pounds: Virginia Paper Company, Inc.; 7.46 cents, Carlots, 7.96 cents, L. C. L.

No. 186—6,000 pounds Ditto, Colored, blue, buff, fawn, green, pink, salmon and yellow; bases 22½x28½, 182 and 230 pounds. Flat, cut and marked as above. Minimum order, one color, one weight, 2,000 pounds: Bid Rejected.

No. 187—6,000 pounds Ditto, 22½x28½inches; 280 and 362 pounds. Cut and marked as above. Minimum order, one color, one weight, 2,000 pounds: Bid Rejected.

50 Per Cent Rag Index, White and Colored, Single-Ply

No. 190—100,000 pounds 50 per cent Rag White Index single-ply; bases 22½x28½ inches, 182 and 230 pounds. Flat, cut 21x32½ and 22½x28½ inches, with projecting colored-paper marker between each 100 sheets. Minimum order, one weight, 5,000 pounds: Barton, Duer & Koch Paper Company; 13.85 cents.

No. 191—10,000 pounds Ditto, 280 and 362 pounds. Flat, cut and marked as above. Minimum order, one weight, 5,000 pounds: Barton, Duer & Koch Paper Company; 16.09 cents.

No. 192—50,000 pounds Ditto, Colored, blue, buff, fawn, green, pink, salmon, and yellow, bases 22½x28½ inches, 182 and 230 pounds. Flat, cut 21x32½ and 22½x28½ inches, marked as above. Minimum order, one weight, 5,000 pounds: Barton, Duer & Koch Paper Company; 15.09 cents.

No. 193—25,000 pounds Colored Ditto; bases 22½x28½, 280 and 362 pounds. Flat, cut and marked as above. Minimum order, one color, one weight, 5,000 pounds: Barton, Duer & Koch Paper Company; 17.09 cents.

100 Per Cent Rag Index, White and Cream, Single-Ply, Tub-Sized, Air-Dried

No. 196—100,000 pounds 100 per cent Rag White and Cream Index, Single-Ply, Tub-sized, Air-dried, Basis 22½x28½ inches, approximately 206 pounds. Flat, cut 20½x30½ and 21x32½ inches: Barton, Duer & Koch Paper Company; 20.80 cents.

Tissue Paper

No. 197—5,000 pounds white tissue paper. Flat, 21x32 inches, 18 pounds. Minimum order, 1,000 pounds: Couthorne Paper Company, Inc.; 11.22 cents.

Facing Stereo Tissue

No. 198—1,000 pounds Facing Stereo Tissue Paper; basis 19x24 inches, 9 pounds. Rolls, 24 inches wide, (3-inch cores). Minimum order, 500 pounds: Cauthorne Paper Company, Inc.; 87.24 cents.

Cover Paper

No. 201—200,000 pounds Colored Coated Cover Paper, india tint, light green, light gray and primrose. Flat, 26¼x41 inches, 208 pounds: Virginia Paper Company, Inc.; 7.5194 cents.

25 Per Cent Rag Machine-Finish Cover, Colored

No. 203—25,000 pounds 25 per cent Rag Colored Antique Machine-finish cover Paper, quaker drab, robin's egg blue, and terra cotta. Flat, 20x25 inches, 96 pounds, in wrapped bundles, with projecting colored-paper marker between each 500 sheets. Minimum order, one color, 2,500 pounds: American Writing Paper Company, Inc.; 7.38 cents.

No. 204—120,000 pounds Ditto, blue, brown, granitem green, pink, tea, and yellow; basis, 20x26 inches, 100 pounds. Flat, cut 20x25 and 33x46 inches, wrapped and marked as above. Minimum order, one color, 5,000 pounds: American Writing Paper Company, Inc.; 7.38 cents.

50 Per Cent Rag Laid Cover, Colored

No. 205—10,000 pounds 50 per cent Rag Colored Laid Cover Paper (Manufacturer's stock shades), blue, buff, cream white, gray and terra cotta. Flat, 20x25 inches, 125 pounds, in wrapped bundles, with projecting colored paper marker between each 500 sheets. Minimum order, one color, 1,250 pounds: Bids Rejected.

50 Per Cent Rag Antique Cover, Colored

No. 206—75,000 pounds 50 per cent Rag Colored Antique Cover Paper, dawn, gobelin-blue, khaki, moss-green, sage, and suede. Flat 20x25 inches, 96 pounds, wrapped as above. Minimum order, one color, 5,000 pounds: R. P. Andrews Paper Company; 8.48 cents.

Manila Paper

No. 209—250,000 pounds Wood Manila Paper, bases, 24x36 inches, 60 to 120 pounds. Flat, cut 21x32 and 25x38 inches, in wrapped bundles, with projecting colored-paper marker between each 500 sheets: Thos. J. McCormick Paper Corporation, New York; 3.80 cents.

No. 210—550,000 pounds Ditto, bases 24x36 inches, 60 to 120 pounds. Rolls, 9, 18 and 21 inches wide (3-inch cores); except 9-inch rolls which shall be wound on wooden plugs, 1½ inch hole: Republic Bag & Paper Company, Brooklyn, N. Y.; 3.575 cents.

Sulphite Manila

No. 211—80,000 pounds Sulphite Manila Paper; bases, 24x36 inches, 100 to 160 pounds. Flat, cut any size, in wrapped bundles of 500 sheets each: Barton, Duer & Koch Paper Company; 6.00 cents (Own make)

No. 212—80,000 pounds Ditto, 160 pounds. Rolls, 18 inches wide (3-inch iron cores): Barton, Duer & Koch Paper Company; 5.91 cents. (Own make)

Rope Manila

No. 213—25,000 pounds Rope Manila Paper; bases 24x36 inches,

How much stock is in reserve?

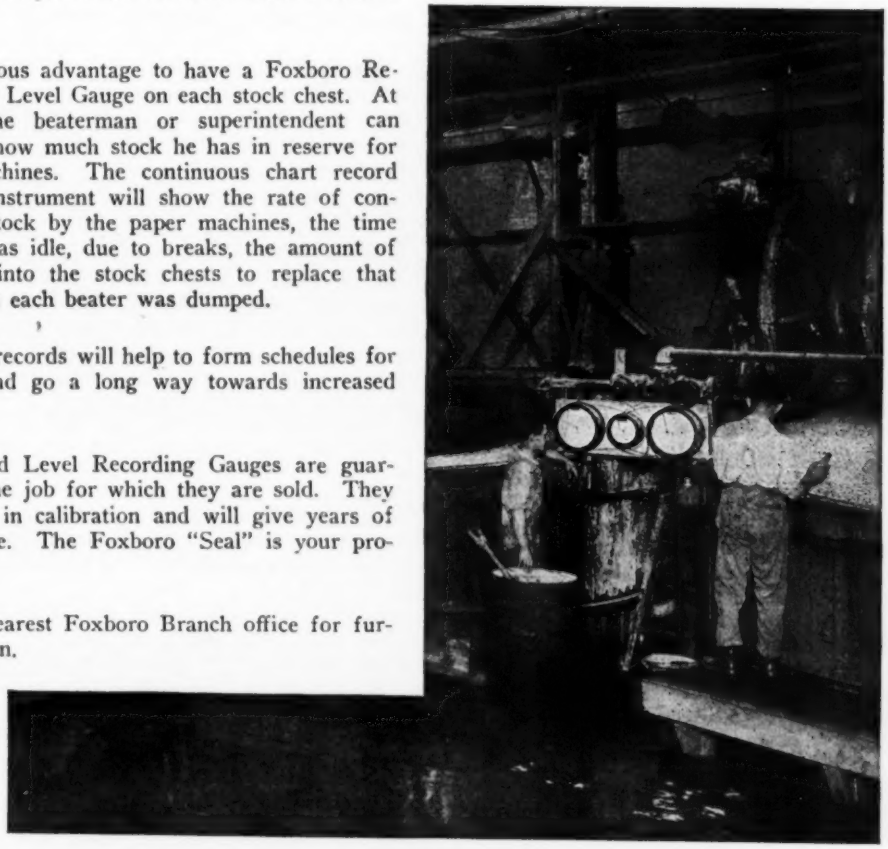
THAT'S a question that comes up dozens of times in the course of a day. Can you answer it at once or do you have to fiddle around with a gauge stick?

It's a tremendous advantage to have a Foxboro Recording Liquid Level Gauge on each stock chest. At one glance the beaterman or superintendent can know exactly how much stock he has in reserve for the paper machines. The continuous chart record kept by this instrument will show the rate of consumption of stock by the paper machines, the time the machine was idle, due to breaks, the amount of pulp pumped into the stock chests to replace that used and when each beater was dumped.

Such valuable records will help to form schedules for future runs and go a long way towards increased production.

Foxboro Liquid Level Recording Gauges are guaranteed to do the job for which they are sold. They are permanent in calibration and will give years of accurate service. The Foxboro "Seal" is your protection.

Write to the nearest Foxboro Branch office for further information.



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Instruments for Controlling, Recording and Indicating Temperature, Flow, Humidity and Pressure

120, 140 and 160 pounds. Rolls, 48 inches wide (3-inch iron cores) Minimum order, 10,000 pounds: Virginia Paper Company, Inc.; 11.30 cents.

No. 214—45,000 pounds Ditto, 280 pounds. Rolls 48 inches wide (3-inch iron cores). Minimum order 15,000 pounds: Virginia Paper Company, Inc.; 10.32 cents.

KRAFT PAPER

No. 217—240,000 pounds No. 2 Kraft Wrapping Paper; bases 24x36 inches, 60 to 160 pounds. Flat, cut any size, in wrapped bundles of 500 sheets: R. P. Andrews Paper Company; 4.235 cents.

No. 218—400,000 pounds Ditto, Cut any size, folded, (25 sheets per fold) in wrapped bundles of 500 sheets each; R. P. Andrews Paper Company; 4.235 cents.

No. 219—250,000 pounds Ditto, Rolls, 11½, 24, 36, 39 and 48 inches wide, wound on wooden plugs, 1½ inch hole, or on 3-inch iron cores as may be specified: Republic Bag and Paper Company; 4.05 cents.

No. 220—40,000 pounds No. 1 Kraft Paper; bases 24x36 inches, 120 and 160 pounds. Flat, any size, in wrapped bundles of 500 sheets each: Whitaker Paper Company; 5.43 cents.

MANILA TAG BOARD

No. 221—150,000 pounds High-Finish Sulphite Manila Tag Board; bases, 24x36 inches, 160 to 280 pounds. Flat, cut any size, minimum width 24 inches, maximum width 38 inches, in wrapped bundles of 500 sheets. Bidder to state name of manufacturer: Whitaker Paper Company, 6.74 cents. Made by Paul A. Sorg Paper Company, Middletown, Ohio.

CALENDERED TAG, MANILA AND COLORED

No. 224—400,000 pounds Manila Calendered Tag Board, Basis 22½x28½ inches, approximately 148 pounds; minimum thickness .0062 inch; maximum thickness, .0070 inch. Rolls 23½x26¾ inches wide (6-inch cores): Bids Rejected.

No. 225—500,000 pounds Ditto, basis 22½x28½ inches; approximately 148 pounds; minimum thickness, .0068 inch; maximum thickness, .0077 inch; Rolls 23½x26¾ inches wide (6-inch cores): Bids Rejected.

No. 226—200,000 pounds Ditto, Colored, blue, brown, green, pink, red, salmon, and yellow; Bases and thicknesses as in Lot No. 224. Minimum order, one color, 5,000 pounds: Bids Rejected.

JUTE TAG

No. 227—100,000 pounds Jute Tag Board; bases 22½x28½ inches, 200 to 280 pounds. Flat, cut any size, minimum width 22 inches; maximum width 32 inches, in wrapped bundles of 500 sheets each. Minimum order, one weight, 5,000 pounds: Whitaker Paper Company, 8.65 cents.

CARD BOARD

No. 301—40,000 pounds Manila Cardboard; basis 22½x28½ inches, 400 pounds. Flat, cut 17x28, 21x32, and 22½x28½ inches, in wrapped bundles of 500 sheets each, with projecting colored-paper marker between each 100 sheets. Minimum 5,000 pounds: Whitaker Paper Company; 5.437 cents.

RAILROAD BOARD, WHITE AND COLORED

No. 302—70,000 sheets White Railroad Board, Flat, 22x28 inches, 4ply, each 100 sheets fully banded, packed in wooden cases. Minimum order 5,000 sheets: R. P. Andrews Paper Company; $26.00 per 1,000 sheets.

No. 303—10,000 sheets Ditto, 8 ply, packed as above. Minimum order 5,000 sheets: R. P. Andrews Paper Company; $37.85 per 1000 sheets.

No. 304—15,000 sheets Ditto, 14 plyeach 50 sheets banded and packed as above. Minimum order, 5,000 sheets: R. P. Andrews Paper Company; $56.62 per 1000 sheets.

No. 305—300,000 sheets Colored Ditto, ash gray, blue, buff, green, lemon, and Orange, Flat 22x28 inches 4-ply, each 100 sheets banded and packed as above. Minimum order, one color, 5000 sheets: Virginia Paper Company, Inc.; $28.49 per 1000 sheets.

WOOD BRISTOL, COLORED

No. 306—60,000 pounds Colored Wood Briston Board, Buff; basis 22½x28½ inches, 150 pounds. Rolls 22 inches wide (6 inch cores): Old Dominion Paper Company; 4.689 cents.

No. 307—200,000 pounds Ditto, buff, blue, gray, green, melon, pink, quaker drab, and yellow. Flat 21x31 inches, 204 pounds, in wrapped bundles of 500 sheets each, with projecting colored paper marker between each 100 sheets: Old Dominion Paper Company; 4.689 cents.

No. 308—300,000 pounds Colored Ditto; basis 22½x28½, 200 pounds. Rolls 20 inches wide (6-inch cores): Old Dominion Paper Company; 4.876 cents.

No. 309—300,000 pounds Ditto, as above: Old Dominion Paper Company; 4.876 cents.

No. 310—100,000 pounds ditto, buff; basis 22½x28½ inches, 200 pounds. Flat, cut 12x18 and 14½x17½inches, the grain to run lengthwise of the sheet, in wrapped bundles of 500 sheets each: Old Dominion Paper Company; 4.689 cents.

U. S. POSTAL CARD BRISTOL

No. 311—11,000,000 pounds U. S. Postal Card Bristol Board; basis 22½x28½ inches, 188 pounds. Rolls 33 inches wide and 34 inches in diameter. (6-inch cores): R. P. Andrews Paper Company; 7,000,000 pounds, 4.83 cents. Whitaker Paper Company; 4,000,000 pounds, 4.83 cents.

MISCELLANEOUS PAPER

No. 351—4,000 pounds White Paraffin Paper. Flat, 24x38 inches, 32 pounds, Minimum order, 1000 pounds: Cauthorne Paper Company, Inc.; 12.45 cents.

No. 352—300,000 sheets White Gummed Paper. Flat, cut 17x22 inches, 40 pounds, exclusive of weight of gum used, and 20 x 25 inches, 54 pounds exclusive of weight of gum used. Minimum order, one size, one weight, 1000 pounds: Old Dominion Paper Company; $6.06 per 1000 sheets, Size 17x22 inches. R. P. Andrews Paper Company; $7.62 per 1000 sheets, Size 20x25 inches.

No. 354—20,000 Pounds White Blotting Paper. Flat, 19x24 inches, 160 pounds, in wrapped bundles of 250 or 500 sheets. Minimum order 4,000 pounds: Virginia Paper Company, Inc.; 6.00 cents.

No. 355—20,000 Pounds Colored Blotting Paper (manufacturers stock shade), buff, and salmon. Flat, 19x24 inches, 160 pounds, in wrapped bundles of 250 or 500 sheets. Minimum order 4,000 pounds: Whitaker Paper Company; 6.07 cents.

No. 356—50,000 pounds 25% Rag White Blotting Paper. Flat, 19x24 inches, 160 pounds wrapped as above. Minimum order, one color, 4,000 pounds: Whitaker Paper Company; 7.11 cents.

No. 358—25,000 Pounds Desk Blotting Paper (Manufacturers stock shade), blue and buff. Flat, 19x24 inches 200 pounds, in wrapped bundles, of 250 or 500 sheets. Minimum order, one color, 5,000 pounds: Virginia Paper Company, Inc.; 6.14 cents.

No. 359—100,000 Pounds Moss Green, Desk Blotting Paper as above. Minimum order 10,000 pounds: Virginia Paper Company, Inc.; 6.74 cents.

No. 360—3,000 Pounds White Stereotype Molding Paper, for paper process; basis, 19x24 inches, 120 pounds. Rolls, 24 inches wide (3-inch cores). Minimum order 1,000 pounds: Cauthorne Paper Company, Inc.; 9.72 cents.

No. 361—2,000 pounds Red Stereotype Molding Paper, for paper process; basis, 19x24 inches, 80 pounds. Rolls, 24 inches wide (3-inch cores). Minimum order 1,000 pounds: Cauthorne Paper Company, Inc.; 12.62 cents.

No. 362—30,000 Pounds, Oil Manila Tympan Paper; basis, 24x36 inches, approximately 200 pounds. Rolls, 38, 48 and 55 inches wide; maximum weight 150 pounds, wound on wooden plugs, 1½-inch hole. Minimum order 5,000 pounds: Virginia Paper Company, Inc.; 8.075 cents.

No. 363—2,000 Pounds Plate-Wiping Paper for embossing presses; basis 24x36 inches, 100 pounds. Rolls, 24 inches wide, wound on wooden plugs, 1½-inch hole. Minimum order 1,000 pounds: Atlantic Paper Company, 8.21 cents.

No. 364—6,000 Pounds Back-lining paper for case-making ma-

(*Continued on page 48*)

"M. & W." Removable Bottom Slitters

Especially designed for wide and fast-running paper machine drum winders

THE GREATEST TIME-SAVING DEVICE FOR WINDERS IN RECENT YEARS

New and Desirable Features

1 Bottom slitters supported by arms from a stationary bar exactly the same as the top slitters, and are independent and removable—and all driven independently from a small, slow-running shaft.

2 The troublesome high speed, large diameter bottom slitter shaft is dispensed with, and a smaller diameter shaft used, running one-third the speed, and in ball bearings in slitter arms.

3 Slitters are adjusted to width of sheet—same as the top slitters.

4 Disc slitters or double edge band slitters may be used, and are carried on small spindles on ball bearings.

5 The wear of slitters caused by the vibration of the heavy slitter shaft eliminated.

6 A bad cutting bottom slitter is more likely to be replaced by a good one and a clean edge made—Removing and resetting all slitters being unnecessary.

7 Labor saved by not handling the slitter shaft, heavy slitters, etc.

(PATENTS PENDING FOR THESE IMPROVEMENTS)

Slitting Attachments with "M. & W." Removable Bottom and Top Slitters can be supplied for drum winders, any width

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PAPER MILL MACHINERY

New York Trade Jottings

Frank C. Ash, vice-president and treasurer of the Oswego Falls Corporation, was a New York visitor early this week.

* * *

Bertel Sjoberg, manager of the Finnish Paper Mills Association, of Helsingfors, Finland, arrived in New York last week and is now in Canada.

* * *

Y. Fukukita, purchasing agent of the Oji Paper Company, Japan, arrived in New York last week from England, where he bought two paper machines, and is now on his way back to Japan.

* * *

W. C. Powers, of Peter Dixon, Ltd., London, England, well known in the paper industry as the former sales manager of the Great Northern Paper Company, arrived in New York on Tuesday, January 29.

* * *

Edgar H. Bristol, president of The Foxboro Company, manufacturers of controlling, recording and indicating instruments, of Foxboro, Mass., sailed from New York aboard the steamer *Santa Teresa* on January 31, for an extensive tour through South America.

* * *

T. E. Wright, of the Taggart Corporation, was the principal speaker at the regular weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry, at the Canadian Club last Monday. His address on "Multi-Wall Bags" was greatly enjoyed by a large attendance of members and guests.

* * *

The report of E. I. du Pont de Nemours & Co., and subsidiaries, to the New York Stock Exchange for the year ended December 31, 1928, shows net income of $64,097,797 after interest and federal taxes, equivalent after debenture dividends, to $21.96 a share earned on 2,674,107 average number of no-par shares outstanding during the year. Based on 2,811,050 common shares outstanding at the end of the year, net income is equal to $20.89 a share, and compares with $45,947,832 or $15.45 a share on 2,661,658 shares in 1927. The 1928 earnings include income of The Grasselli Chemical Company for month of December only.

* * *

Charles F. Hubbs & Co., general paper merchants, of 383-389 Lafayette street, New York, announce with great regret that John T. Bonham, their assistant treasurer, who has been associated with the company for over thirty-six years, is retiring to private life. It was in the year 1892 that Mr. Bonham became affiliated with Charles F. Hubbs & Co. The main office of the company was then at 36 Beekman street—a branch is still maintained at 30 Beekman street, a few doors away from the old place. Mr. Bonham has devoted his life to the care and well being of his mother. He has been joined in this by a brother, Edward W. Bonham. Recently Mrs. Bonham died and both men are finding it very hard to fill the gap created. They will probably do extensive traveling for some time to come. Mr. Bonham has the best wishes of all connected with the paper industry.

Buys Brown Paper Co. of Texarkana

SHREVEPORT, La., February 4, 1929.—The Louisiana Paper Company, Ltd., of this place, has purchased the Brown Paper Company, of Texarkana, Ark.

The Louisiana Paper Company, Ltd., has recently entered the fine paper business and has adopted the following brands:

Worthy Book Paper, Ritzy Book Paper, Excel Egg Shell Book Paper, Lapaco Book Paper, Harvest Book Paper, Model Bond (Unwatermarked), Lapaco Southern Watermarked, Lapaco Vanderbilt Watermarked, Orchard Ledger (Unwatermarked), and Favorite Index Bristol.

ANNOUNCES PAPER AWARDS

(*Continued from page 46*)

chines. Basis 24x36 inches, 180 pounds. Rolls, 18 inches diameter, 9⅛, 11⅜, and 24 inches wide, wound on wooden pegs, 1 or 1½ inch hole. Minimum order 2,000 pounds: Cauthorne Paper Company, Inc.; 4.70 cents.

No. 365—24,000 Sheets, Red Press Board. Flat, 24x32 inches, thickness, .0140 inch. Minimum order 2,000 sheets: Barton, Duer & Koch Paper Company; $6.1 per 100 sheets.

No. 366—20,000 Sheets, gray pressboard. Flat, 30x36 inches, thickness, .0300 inch. Minimum order 5,000 sheets: Barton, Duer & Koch Paper Company; $6.10 per 100 sheets.

No. 401—2,000 Pounds news Board. Flat, cut 26x38 inches, No. 100 (to be trimmed square on 4 sides.) Minimum order 500 pounds: Barton, Duer & Koch Paper Company; 2.49 cents.

No. 402—700,000 Pounds chip Board, basis 26x38 inches, No. 50. Flat, cut 21½x32½, 24½x38, 26x38, 28½x34½, and 32½x42½ inches: Old Dominion Paper Company; 1.853 cents.

No. 403—50,000 Pounds Marble grained lined board; basis 26x38 inches, No. 50. Flat, cut 22x32 inches: Whitaker Paper Company; 3.73 cents.

No. 404—40,000 Pounds Strawboard. Flat, cut 26x38 inches, No. 50: Walker-Goulard-Plehn Company; 2.30 cents.

LINED STRAWBOARD

No. 405—10,000 Pounds Lined Strawboard. Flat, cut 26x38 inches, No. 50: La Boiteaux Company, Cincinnati, Ohio; 3.64 cents L.C.L.; 3.095 cents car lots.

No. 406—80,000 Pounds Lined Boxboard. Lined one side, basis 26x38 inches, No. 40. Flat, cut 34½x34 inches. Minimum order 36,000 Pounds: La Boiteaux Company; 2.325 cents.

No. 407—700,000 Pounds Binders Board Hard Rolled, No. 2 Quality. Nos. 16, 20, 25, 30 and 40. Flat, cut 25x30 inches. Minimum order 36,000 pounds: R. P. Andrews Paper Company; 3.375 cents.

No. 408—150,000 Pounds, Binder Board, Hard Rolled, Best Quality. Nos. 18, 20, 25, 30, 35, 40, and 45. Flat, cut 20x30 inches and 22x28 inches: Barton, Duer & Koch Paper Company; 5.50 cents.

No. 357—25% Rag, Colored, Blotting Paper, (manufacturer's stock shades) buff and salmon. Flat, 19x24 inches, 160 pounds. Minimum order, one color, 4,000 pounds: Whitaker Paper Company; 7.11 cents.

MAY REORGANIZE IN PAPER WEEK

(*Continued from page 19*)

ADVISORY COMMITTEE TO U. S. FOREST PRODUCTS LABORATORY

R. H. Laftman, Chairman, Bogalusa Paper Co., Bogalusa, La.

JOINT COMMITTEE ON VOCATIONAL EDUCATION

J. Norman Spawn, Chairman, Champion Fibre Company, Canton, N. C.

NATIONAL COMMITTEE ON WASTE UTILIZATION AND STREAM IMPROVEMENT

John D. Rue, Chairman, Champion Fibre Co., Canton, N. C.

Lignite, As A Commercial Fuel

"Lignite, As a Commercial Fuel," by Edward P. Price, which was presented before the National Electric Light Association Convention, 1928, won the James H. McGraw second prize award.

It contains valuable information on the use of lignite in pulverized form. It also describes experiences incident to the use of pulverized lignite in such important central station plants as the Trinidad station of the Texas Power & Light Company and the Comal Power Company's plant at New Braunfels, Texas.

Copies of this article will be sent upon request to the Combustion Engineering Corporation, 200 Madison avenue, New York.

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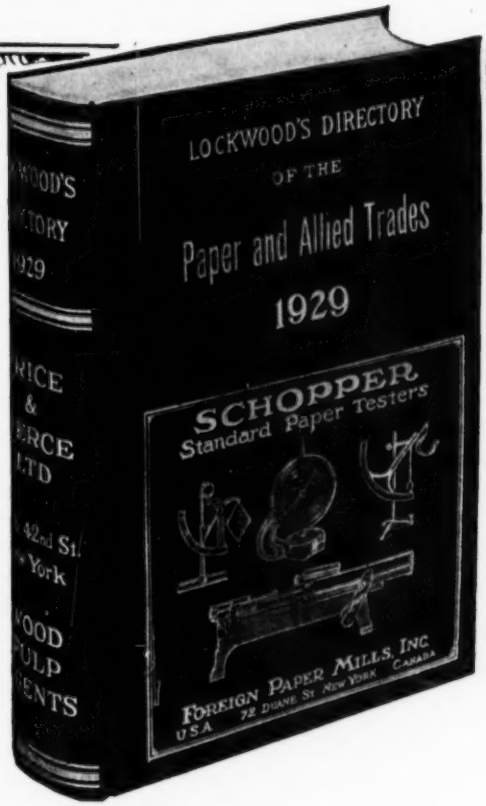

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Classified List of Pulp Mill Products
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Envelope Manufacturers
Glazed and Coated Paper Manufacturers
Idle Mills
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Power Engineering Consultant

Member A. B. C. Audit Bureau of Circulations

Vol. LXXXVII New York, February 7, 1929 No. 6

COMING EVENTS

Fifty-second Anniversary of the American Paper and Pulp Association. Convention and Meeting of Affiliated Associations. Waldorf-Astoria Hotel, February 18-21. Annual Meeting, Thursday, February 21. Annual Banquet, Grand Ball Room, Thursday, February 21.

National Paper Trade Association of the United States. Convention, Waldorf-Astoria Hotel, February 18-20. Annual Banquet and Dance, Grand Ball Room, Roosevelt Hotel, Wednesday, February 20.

Technical Association of the Pulp and Paper Industry. Convention, Waldorf-Astoria Hotel, February 18-21. Annual Banquet, Hotel Commodore, Wednesday, February 20.

Salesmen's Association of the Paper Industry. Annual Meeting, Waldorf-Astoria Hotel, Tuesday, February 19. Luncheon, Tuesday, February 19.

New York Association of Dealers in Paper Mill Supplies. Annual Banquet, Hotel Commodore, Wednesday, February 20.

SUPPLY AND DEMAND IN NEWS PRINT

Mr. R. O. Sweezey, of Montreal, who is a director of the Lake St. John Power and Paper Company and of the Port Alfred Power and Paper Company, gives it as his opinion that it is costing the pulp and paper industry in Canada $40,000,000 a year "because some people have not been thinking far enough ahead."

"Efforts have been made to beat the game of supply and demand," he says. "It would have been better to make new rules for the game instead, but having made them it would have been equally advisable to play according to those rules."

He made these remarks in an interview in Ottawa, and proceeded to offer trenchant criticism of the policy of Canadian mills.

"During the past couple of years," he said, "the promoters of the industry in Canada have been running a race with a sort of will-o'-the-wisp objective and now we find production capacity of Canadian mills up to 10,000 tons daily with marketing capacity of only about 7,000 tons daily. Prices have dropped from $65 a ton to $50 a ton or less. With most mills this is barely sufficient to meet fixed charges and in some cases earnings fall considerably short of meeting fixed charges. Outside of Canada production of newsprint amounts to about 5,200 tons daily in the United States and 800 tons daily in Newfoundland—a total of 1,800,000 tons a year. Canadian Mills can produce 3,000,000 tons a year. The North American market is somewhat under 4,000,000 tons a year at the present time.

"While Canadian mills have been wrangling with one another during the past year or two, and especially in the past six months, most United States mills have booked up to capacity, thus leaving Canadian plants to assume all the curtailment with its consequences of higher cost and lower selling prices.

"But the outlook is not so dark as it may appear. With the right kind of co-operation Canadian plants should be well on the upgrade to success again within 12 to 15 months.

"This will necessitate, however, somewhat better co-operation than has been manifested in the past and can perhaps best be taken care of by giving the operators a larger share in the negotiations for closer and more effective co-operation.

"One of the most important factors in this whole Canadian industry is the competition afforded by the export of raw Canadian pulp wood which provides American mills with material for about one million tons of paper a year.

"It has been argued that the Federal Government should be urged to put an export tax on pulpwood but Canadian paper mill operators know that there are other methods that are just as effective and that will involve no tariff troubles.

"Co-operation in buying of pulpwood by Canadian mills is the solution.

"There are some pretty good heads among the operators of Canadian mills. At the present time they are perhaps somewhat dazed by whirlwind financial structures but if these same heads are given freedom of action the come-back of the paper industry will be marvelous.

"At the present time there is business enough for Canadian mills to operate at perhaps 72 to 73 per cent capacity, at which capacity the cost of production is obviously much higher than when running full time. It will take probably a couple of years for consumption to catch up with the production of the Canadian mills.

"Fifty-five dollars is not a fair price per ton, considering that $5 per ton should be spent on forests for conservation and scientific operation. At $55 of course some mills will make 15 per cent honest profit and other mills operating at 75 per cent will not make any profit. With proper and scientific operation of forests $65 a ton would be a fair price."

The news print situation has been brought up in discussions in the Provincial Legislature of Quebec, now in session. Alderic Blain, one of the Montreal members, charged that the Government's policy of leasing timber limits and insisting on the annual erection of mills was responsible for the news print crisis. Lack of foresight, he said, had been at the root of all the trouble. If the Government had had its eyes open in 1926 when the last concession had been made to the International Paper Company, which was strangling Canadian concerns, then things might have been different.

He also referred to the International's contracts at $50 per ton with the Hearst papers which had been solely to crush Canadian companies out of the field.

A further charge was made that the Government had promised forestry concessions to the International Paper Company if an arrangement to relieve the news print situation could be brought about.

Premier Trochereau issued a definite denial of all the charges, and said that so far from receiving concessions from the government, the International Paper Company had obtained some of its timber limits by purchasing them from private interests.

Plans for Superintendents Meeting

Judging from present indications, the tenth annual convention of the American Pulp and Paper Mill Superintendents' Association, to be held at Wausau, Wis., June 6 to 8, inclusive, will be the largest and best in every respect that the organization has ever held. R. H. Kelly, general superintendent of the Marathon Paper Mills Company, is general chairman. Fred C. Boyce of the Wausau Paper Mills is acting as honorary chairman, and Wallace Shymanski is secretary of the Convention Committee. Mr. Kelly has just announced the following Convention Committees:

Finance Committee: P. M. Wilson, chairman; N. S. Stone, T. L. Edmonds.

Entertainment Committee: E. M. Bassler, chairman; H. A. Skinner, N. H. Foley.

Transportation and Mill Visits Committee: Grover Keeth, chairman; G. H. Urban, W. E. Payne.

Publicity and Advertising Committee: R. H. Kelly, chairman; Wallace Shymanski, secretary.

Program and Arrangements Committee: F. L. Zellers, chairman; Vassie Atherton, George Voight.

Registration Committee: Allen Abrams, chairman; W. R. Winn, Judson P. Smith.

Ladies Committee: Mrs. D. C. Everest, chairman; Mrs. R. H. Kelly, Mrs. Grover Keeth, R. M. Altman, C. H. Noble.

Divisional Meeting Chairmen:

Chemical and Mechanical Pulp: Victor E. Fishburn, C. F. Burgess Laboratories, Madison, Wis.

Book and Fine Papers: James G. Ramsey, Jessup & Moore Paper Company, Wilmington, Del.

Board and Coarse Papers: Tom Harvey, Gardner & Harvey Company, Middletown, Ohio.

Superintendents' Mill Service Committee: K. E. Terry, S. D. Warren Company, Cumberland Mills, Me.

Hotel reservations will be taken care of by Wallace Shymanski and letters should be addressed to him on this subject in care of the Hotel Wausau, Wausau, Wis., as all reservations for hotel accommodations must go through this committee.

Mr. Kelly would like to have all suggestions as to what subjects would be of interest to the pulp and paper mill superintendents sent to him as soon as possible.

Blake, Moffit & Towne Open Inspection Dept.

As an evidence that modern business methods attach more and more importance to the value of exacting tests in order to maintain standards of quality and uniformity, the recent announcement of Blake, Moffitt & Towne, creating an Inspection Department in their San Francisco Headquarters has been of much interest to the trade. Although work of this kind has always been carried on, several factors have led up to the organization of the new Inspection Service. In the first place, it is pointed out that the requirements of the trade are becoming increasingly varied and complex. Many new lines have been added to meet this need.

This fact, coupled with the company's expansion through the establishment of new divisions in the natural market centers, has greatly added to the detail of merchandising of paper and has laid much greater emphasis on the importance of a well ordered system of inspection.

To direct the activities of this department, Donald L. Jeffries has been placed in charge. Mr. Jeffries, though still a young man, has had a wide and varied experience in paper manufacture and technology. Many friends in the trade will recognize him as the son of Frank E. Jeffries, for many years head of the Tacoma Paper and Stationery Company, one of the important links in the Blake, Moffitt & Towne chain in the Pacific Northwest. Besides the benefit of being raised, so to speak, in the atmosphere of paper Mr. Jeffries upon his graduation from the University of Oregon, entered the Crown Willamette Paper Company's mill at Camas, Wash.

After this valuable mill experience, he joined the organization of the Neenah Paper Company, at Neenah, Wis., manufacturers of high grade bonds and ledger papers. Here he spent a great deal of his time in the testing laboratory and gained a full knowledge of paper technology. He was also for a time connected with the Northern Paper Mills, located at Green Bay, Wis., where he secured much valuable data on the manufacture of tissue and toweling papers manufactured by this mill.

In order to round out his experience, Mr. Jeffries recently completed an intensive course in printing at the Carnegie Institute of Technology located in Pittsburgh. This work included the study of the chemistry of printing inks and all other technical matters connected with the printing craft. It will be seen that with such a background Mr. Jeffries is well qualified to handle the details connected with his new work in the San Francisco headquarters.

To Oppose Eastern Class Freight Rates

[FROM OUR REGULAR CORRESPONDENT]

SYRACUSE, N. Y., February 2, 1929.—Four hundred executives, traffic managers and trade association chiefs gathered during the past week in the Onondaga Hotel to determine upon plans for appearance before the Public Service Commission in Albany on February 18 to voice united opposition to the proposed eastern class freight rates of the Interstate Commerce Commission and to aid the state body in its inquiry to get all information possible on rates applicable to the transfer of freight between points in this state, whether the traffic is transported over interstate or intrastate routes. Wilbur La Roe, Jr., of Washington, commerce counsel for the association of manufacturers who has fought the proposed increase since the Federal proceeding was instituted on May 13, 1924, addressed the meeting after it had been organized by J. D. Greene, chairman of the association traffic council. Following general discussion and repeated statements that if the proposed increases averaging thirty per cent on outgoing freight from plants in this state prevail they will cost millions of dollars yearly and drive industries to other fields, representatives of chamber of commerce organizations held an animated session to map out a plan of action for their group.

Among those from Northern New York attending the meeting were Joseph A. Quinlan, traffic manager of the St. Regis Paper Company, C. J. Milvo, representing the Carthage Chamber of Commerce, and F. M. McIntyre, of the Potsdam Chamber of Commerce. Mr. Quinlan said that Northern New York was preparing to protect its interests and arranging proper presentation of the facts surrounding conditions in that section. He also said that in the near future a meeting of all persons interested would be held at some convenient place in Northern New York.

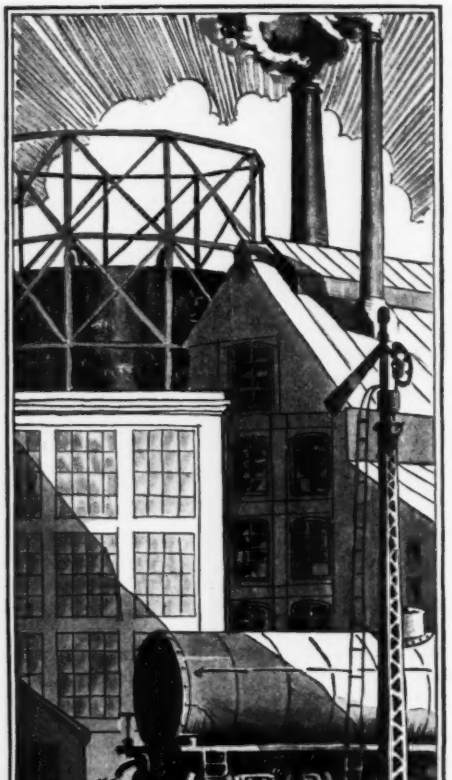
Rainier Pulp Co. Fixes Dividends

The directors of the Rainier Pulp and Paper Company have placed the class A common stock on a $2 annual dividend basis by declaring a dividend of 50 cents payable March 1 to stockholders of record February 18. They also have placed the class B common stock on a regular dividend of 25 cents per share and also declared an extra dividend of 25 cents per share on class B common stock, payable March 1.

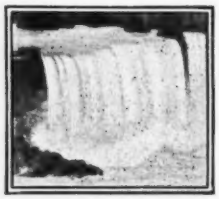
The class A common stock is entitled to preferential dividends of $2 per annum. After $2 is paid on class B in any one year, then both classes share alike in any further dividend disbursements.

The dividend action of the directors indicates that earnings at present justify dividends at the $2 rate on both classes of stock. The class A common stock was marketed last fall and currently is selling for about 35.

The company recently made announcement through the financial press that it had sold 100,000 shares of class A common stock at 33.25 for the purpose of bringing about a financial reorganization. The stock had been sold prior to the announcement which was made only as a matter of record. The Rainier Pulp and Paper Company has a plant at Shelton, Wash.



A Valuable Basic Chemical—From the Air at Niagara



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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

United States Patents on Paper Making

Issued from October to December, 1928

Prepared by Clarence J. West, Chairman, Committee on Abstracts and Bibliography

OCTOBER 2, 1928

1,685,800. Treatment of sulphite-wood-pulp liquor. Webster E. Byron Baker, York Haven, Pa. (Cl. 23—131.)

1,685,809. Paper and pulp screening machine. Edward B. Fritz, Chicago, Ill. (Cl. 92—29.)

1,685,917. Process for finishing and coloring paper and paper made therefrom. Thomas Hans, assignor to Container Corporation of America, Chicago, Ill., a Corporation of Delaware. (Cl. 92—40.)

1,686,217. Controlling device for pulp-refining engines. Arthur J. Loman, Uncasville, Conn., assignor of one-half to William Brown, Uncasville, Conn. (Cl. 92—27.)

1,686,322. Paper-making machinery (diaphragm). Charles L. Henderson, assignor to Paper Patents Company, Neenah, Wis. (Cl. 92—32.)

1,686,388. Paper-crinkling machine. William A. Lorenz, assignor to The Otaka Fabric Company, West Hartford, Conn. (Cl. 92—69.)

1,686,426. Coating machine. William H. Waldron and Lynn B. Case, assignors to John Waldron Corporation, New Brunswick, N. J. (Cl. 91—12.)

OCTOBER 9, 1928

1,686,649. Reenforced transparent sheet and process of making the same. Mittie Taylor Brush, Dublin, N. H. (Cl. 91—68.)

1,686,671. Plaster board. Alexander S. Speer, assignor to United States Gypsum Company. (Cl. 154—45.9.)

1,686,818. Apparatus for making paper. Lester Kirschbraun, Chicago, Ill. (Cl. 92—41.)

1,687,076. Process for cooking wood chips by the alkaline process for pulp manufacture. Robert Woodhead, assignor to Venning D. Simons, Chicago, Ill. (Cl. 92—13.)

1,687,140. Watermarked paper. Anton Pleyer, assignor to Gebr. Ebart, Berlin, Germany. (Cl. 92—38.)

1,687,289. Paper-box-making machine. Frank O. Feeley, assignor to M. D. Knowlton Company, Rochester, N. Y. (Cl. 93—41.)

1,687,446. Flow regulator. James A. Hedgcock, assignor to The Management Engineering and Development Company, Dayton, Ohio. (Cl. 92—46.)

1,687,447. Paper-making machinery. Ralph E. Heisel, assignor to The Mead Pulp and Paper Company, Dayton, Ohio. (Cl. 92—44.)

1,687,453. Manufacture of glass, sand, or flint paper, emery cloth, and like abrasives. Carl Adolphe Klein, Brimsdown, and Robert Skirving Brown, London, England. (Cl. 51—278.)

1,687,454. Glass, sand, or flint paper, emery cloth, or like abrasive. Carl Adolphe Klein, Brimsdown, and Robert Skirving Brown, London, England.

OCTOBER 16, 1928

1,687,599. Fiber board and method of making same. Charles A. Upson, Lockport, N. Y., assignor of one-half to W. Harrison Upson, Lockport, N. Y. (Cl. 92—42.)

1,687,681. Cement product. Richard V. Mattison, assignor to Asbestos Shingle, Slate and Sheathing Company, a Corporation of Pennsylvania. (Cl. 92—41.)

1,687,716. Paper cup. Rawson P. Dickerson, East Orange, N. J. (Cl. 229—1.5.)

1,687,683. Apparatus for the grooving of cardboard. Ernst Mögel, assignor to the Firm Aktiengesellschaft für Cartonnagenindustrie, Dresden, Germany. (Cl. 92—70.)

1,687,847. Paper-making machine. Robert E. Read, assignor to International Paper Company. (Cl. 92—38.)

1,688,216. Apparatus for withdrawing air from suction boxes. Max Wenzel, Muldenstein, near Bitterfeld, Germany. (Cl. 92—51.)

1,688,267. Paper making (Method of guiding the paper web). Hervey G. Cram, assignor to Great Northern Paper Company, Millinocket, Me. (Cl. 92—49.)

OCTOBER 23, 1928

1,688,835. Paper-break indicator. Edward P. Sheldon, assignor to R. Hoe and Co., Inc., New York, N. Y. (Cl. 192—127.)

1,688,904. Process for simultaneously making sugar and paper pulp from cane. Eugenio Antonio Vazquez, assignor to Vazcane Process, Inc., Habana, Cuba. (Cl. 127—45.)

1,688,905. Apparatus for simultaneously making sugar and paper pulp from cane. Eugenio Antonio Vazquez, assignor to Vazcane Process, Inc., Habana, Cuba. (Cl. 127—4.)

1,689,037. Machine for making elastic paper. William A. Lorenz, assignor to The Otaka Fabric Company, West Hartford, Conn. (Cl. 92—69.)

OCTOBER 30, 1928

1,689,190. Rotary refiner. Edmund P. Arpin, Jr., Port Edwards, Wis. (Cl. 92—26.)

1,689,302. Safety paper. Burgess W. Smith, assignor to The Todd Company, Inc., Rochester, N. Y. (Cl. 283—8.)

1,689,354. Method of forming combined paper and fabric material. James R. McKenna, Cleveland, Ohio. (Cl. 154—35.)

1,689,427. Machine for making paper cones. Charles K. Dunlap, assignor to Sonoco Products Company, Hartsville, S. C. (Cl. 93—79.)

1,689,533. Method of and apparatus for molding reducers for fibrous conduits. Howard Parker, assignor to Brown Company, Berlin, N. H. (Cl. 92—54.)

1,689,534. Cyclic process for the manufacture of kraft pulp. George A. Richter, assignor to Brown Company, Berlin, N. H. (Cl. 92—13.)

1,689,553. Paper, cardboard and pasteboard making machines. Otto Leonhardt, Crossen, Germany. (Cl. 92—39.)

1,689,555. Pulp mold of Laminate structure. Felix Louisot, Hasbrouck Heights, N. J. (Cl. 92—54.)

1,689,593. Process and apparatus for forming grease-proof fiber containers. Donald G. Magill, assignor to American Can Company, New York, N. Y. (Cl. 93—80.)

1,689,687. Spring hinge for pulp screens. George Reynolds, Anderson, Ind. (Cl. 92—32.)

1,689,755. Stock-regulating mechanism for paper-making machines. John Robert Spoor, Kalamazoo, Mich.

1,689,812. Fiber board and process of making the same. Frederick P. Wood, assignor to Simplex Paper Corporation, Adrian, Mich. (Cl. 154—2.)

1,689,932. Pulp beater. Leonard E. Randecker, assignor to Hammermill Paper Company, Erie, Pa. (Cl. 92—25.)

NOVEMBER 6, 1928

1,690,109. Collapsible box. Ralph A. Gross, assignor to Simplex Paper Box Co., Lititz, Pa. (Cl. 229—34.)

1,690,152. Press (for compressing wall board). Adam Ziska, Jr., assignor to Wood Conversion Company, Cloquet, Minn. (Cl. 92—61.)

1,690,172. Machine for making elastic paper. William A. Lorenz, West Hartford, Conn. (Cl. 92—69.)

1,690,192. Method of charging cellulose digesters and the like and means therefore. Per Albert Fresk, Robertsfors, Sweden. (Cl. 214—17.)

1,690,203. Paper-making machine (Stock box and slice). Nickolas J. Niks, Chillicothe, Ohio. (Cl. 92—44.)

1,690,229. Wall board. William M. Jenkins, Chicago, Ill. (Cl. 154—45.9.)

1,690,253. Reenforced-edge plaster board. John Schumacher, Los Angeles, Calif. (Cl. 154—45.9.)

1,690,287. Method and machine for making paper tubes. Joseph N. Francis, assignor to Standard Coin Wrappers, Inc., Boston, Mass. (Cl. 93—81.)

1,690,402. Process and apparatus for making paper. John C. Corcoran, assignor to Argy Preheating Corporation, Niagara Falls, N. Y. (Cl. 92—38.)

1,690,411. Creping of paper. David William Hudson, Green Bay, Wis. (Cl. 92—69.)

1,690,528. Apparatus and method for making fibrous boxes. Oscar P. Bushnell, assignor to The Arvey Manufacturing Co., Olean, N. Y. (Cl. 92—56.)

1,690,586. Collapsible paper cup. William J. Main, assignor to Charles Errett, New York, N. Y. (Cl. 229—53.)

1,690,631. Process for treatment of paper. David Genese, deceased, Baltimore, by Norris Genese, Baltimore, Md. (Cl. 91—70.)

1,690,661. Paper beater. Amos. C. Bontell, Pittsfield, Mass. (Cl. 92—22.)

1,690,894. Press for treating boards of alkali cellulose and the like. Wilhelm Dützmann, Neustadt-on-the-Haardt, Germany. (Cl. 260—10.)

1,690,954. Process for the extraction of cellulose or paper pulp from fibrous vegetable matter containing the same. Edmondson Spencer, Calcutta, British India. (Cl. 92—7.)

NOVEMBER 13, 1928

1,691,101. Wood grinder. Xaver Winkler, assignor to the Firm E. Holtzmann and Cie, A.-G., Weisenbachfabrik, Germany. (Cl. 83—75.)

1,691,102. Wood-splitting machine. George S. Witham, Sr., assignor to Ramar Syndicate, Inc., Norfolk, Va. (Cl. 144—193.)

1,691,308. Beater for paper stock. Charles R. Seaborne, Appleton, Wis. (Cl. 92—20.)

1,691,511. Process of making chemical pulp. John S. Bates, Bathurst, New Brunswick, Canada. (Cl. 23—185.)

1,691,682. Process and apparatus for producing wood pulp. Carl Busch Thorne, Hawkesbury, Ontario, Canada. (Cl. 92—7.)

1,691,752. Process for making waterproof paper board. Edmund Bache, assignor to Waldorf Paper Products Company, St. Paul, Minn. (Cl. 92—21.)

NOVEMBER 20, 1928

1,691,930. Method of paper drying and apparatus therefor. Alvin E. Montgomery, Oak Park, Ill. (Cl. 34—48.)

1,692,112. Method and apparatus for handling broke. Hervey G. Cram, assignor to Great North-

* Previous lists, covering patents for 1928, will be found in Paper Trade Journal 86, no. 18:68 (May 3, 1928); 87, no. 5:58-59 (Aug. 2, 1928); no. 16:38-39 (Oct. 16, 1928). The complete list for 1928, arranged by classes, will be published in Technical Association Papers for 1929.

ern Paper Company, Millinocket, Me. (Cl. 92—38.)

1,692,129. Machine for drying fabrics and paper in an endless web. Aubin Lambrette, Membac-Delhain, Belgium. (Cl. 34—12.)

1,692,219. Envelope and other articles of paper. Ladislaw Medveczky, Rakoshegy, Hungary. (Cl. 229—81.)

1,692,243. Measuring apparatus for the thickness of webs. Wilhelm Beckmann, Duisburg, and Alfred Schopper, Leipzig, Germany. (Cl. 33—172.)

1,692,274. Device for removing caps from paper cores. Michael J. Malloy and Everett A. Buck, assignors to Great Northern Paper Company, Millinocket, Me. (Cl. 29—88.2.)

1,692,534. Machine for making cardboard and similar boxes. Nicholas Pentreath Andrew, William Leslie Macfie and Robert William Rose, assignors to Andrew and Suter, Finsbury, England. (Cl. 93—56.)

1,692,602. Beating engine. George Stanford Witham, Jr., Hudson Falls, N. Y. (Cl. 92—24.)

1,692,645. Safety paper. Louis Gailer, assignor to E. E. Lloyd Paper Co., Chicago, Ill. (Cl. 283—9.)

1,692,733. Paper and pulp making cylinder mold. Tom Harvey, Middletown, Ohio. (Cl. 92—43.)

1,692,747. Calender doctor. Carl G. Lindstrom, assignor to Rice, Barton and Fales, Inc., Worcester, Mass.

1,692,774. Paper and paper stock and method of producing the same. Lewis Grafflin, assignor to Ball Brothers Company, Muncie, Ind. (Cl. 92—9.)

NOVEMBER 27, 1928

1,692,822. Manufacture of moistureproof paper packages. Henry G. Eckstein, assignor to The Cracker Jack Co., Chicago, Ill. (Cl. 93—2.)

1,692,901. Drive for paper-drying machines and the like. Bernard A. Malkin, Lachine, Quebec, Canada. (Cl. 34—48.)

1,693,023. Method of making paper boxes. William S. Cleaves, assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass. (Cl. 93—43.)

1,693,136. Machine for making paper boxes. Harold Carle, assignor to F. N. Burt Company, Limited, Toronto, Ontario, Canada. (Cl. 93—40.)

1,693,172. Means and method for making and sealing boxes and the like. Samuel Bergstein, assignor to The Interstate Folding Box Company, Middletown, Ohio. (Cl. 93—2.)

1,693,358. Stone roll. John Warren Vedder, Worcester, Mass. (Cl. 92—49.)

1,693,374. Vacuum seal. William P. Feeney, Cheboygan, Mich. (Cl. 92—50.)

1,693,494. Machine for testing typewriting ribbons, carbon paper, etc. Winfield P. Pembroke, assignor to Kee Lox Manufacturing Company, Rochester, N. Y. (Cl. 73—51.)

1,693,560. Paper-stock strainer. John D. Haskell and Mortimer R. Rust, assignors to Dilts Machine Works, Incorporated, Fulton, N. Y. (Cl. 141—12.)

1,693,586. Process of recovering resinous by-products in the manufacture of wood pulp. Edward H. French, Columbus, Ohio. (Cl. 203—4.)

DECEMBER 4, 1928

1,693,716. Plaster board and the like. William Hoffman Kobbe, assignor to Texas Gulf Sulphur Company, Bay City, Texas. (Cl. 154—45.9.)

1,693,934. Water evacuator for drier drums. William H. Millspaugh, assignor to The Paper and Textile Machinery Co., Sandusky, Ohio. (Cl. 34—4.)

1,693,983. Apparatus for boiling cellulose. Carl Hangleiter and Adolf Schneider, assignors to the Firm: Zellstofffabrik Waldhof, Mannheim-Waldhof, Germany. (Cl. 92—7.)

1,693,999. Process for filling boilers for cellulose with sulphite solution. Hans Clemm, assignor to Zellstofffabrik Waldhof, Mannheim-Waldhof, Germany. (Cl. 92—7.)

1,694,139. Charging apparatus for pulp digesters. Elis Olsson, West Point, Va. (Cl. 92—7.)

1,694,179. Process for refining wood resin. George E. Jenks, assignor to Hercules Powder Company, Wilmington, Del. (Cl. 203—4.)

1,694,231. Process of making raw calcium bisulphite digesting liquor. George A. Richter, assignor to Brown Company, Berlin, N. H. (Cl. 23—132.)

1,694,349. Apparatus for controlling the drying operation in paper machines. George S. Witham, Jr., Hudson Falls, N. Y. (Cl. 34—48.)

DECEMBER 11, 1928

1,694,523. Waterproof sheet structure. John F. White, assignor to White Products Company, Chicago, Ill. (Cl. 154—2.)

1,694,622. Rotary screen for screening pulp and paper stock. Ernest W. Lindquist, Helsingfors, Finland. (Cl. 92—36.)

1,694,627. Apparatus for manufacturing containers. Clarence R. Robinson, assignor to Robinson Fibre Corporation, Wilmington, Del. (Cl. 92—56.)

1,694,640. Lath board. George A. Buttress, Los Angeles, Calif. (Cl. 72—124.)

1,694,698. Suction roll for paper-making machines. Earl E. Berry, assignor to Beloit Iron Works, Beloit, Wis. (Cl. 92—53.)

1,694,704. Variable-speed control for paper-making machines. Harold F. Dunbar, Turners Falls, Mass. (Cl. 92—38.)

DECEMBER 18, 1928

1,695,319. Coating machine. Lynn B. Case, assignor to John Waldron Corporation, New Brunswick, N. J. (Cl. 91—23.)

1,695,380. Feed control of paper-making machines and apparatus therefor. August Kolitsch, Port Alfred, Quebec, Canada. (Cl. 92—46.)

1,695,448. Paper-making machine. Leon M. Yoerg, assignor to American Writing Paper Company, Incorporated, Holyoke, Mass. (Cl. 92—44.)

1,695,568. Paper bag. Howard A. Wolf, assignor to Wolf Brothers, Philadelphia, Pa. (Cl. 229—68.)

1,695,873. Paper-making machine. Harrison R. Williams, Chicago, Ill. (Cl. 92—38.)

1,695,972. Erik Alexander Ohlin and Frans Oskar Carlsson, Hyltebruk, Sweden. (Cl. 92—49.)

1,695,974. Roller vacuum extractor. George Feebles, assignor to Selbec, Inc., New York, N. Y. (Cl. 92—51.)

DECEMBER 25, 1928

1,696,273. Mechanism for working pulpous material. Helgo Wiggo Jespersen, assignor to Western Electric Company, Incorporated, New York, N. Y. (Cl. 92—41.)

1,696,354. Pulp-screening machine. Anton Joseph Haug, Nashua, N. H. (Cl. 92—35.)

1,696,474. Press for treating boards of alkaline cellulose and the like. Wilhelm Dützmann, Neustadt, Germany. (Cl. 100—50.)

1,696,639. Deinking process and means for performing same. William Lewis, Vancouver, British Columbia, Canada. (Cl. 92—13.)

1,696,641. Jordan-engine-shell lining. Homer D. Martindale, assignor to The Black Clawson Company, Hamilton, Ohio. (Cl. 92—27.)

1,696,896. Pulp board and process of manufacturing the same. Herbert Theodore Price, Burwood, Sydney, New South Wales, Australia. (Cl. 92—9.)

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

Mechanical Process

Read Automatic Grinder. R. E. Read. U. S. pat. 1,602,211 (Oct. 5, 1926); Paper Trade J. 86, No. 21, 53-58 (May 24, 1928). To overcome the trouble due to arching in the usual type of pocket or hydraulic grinders chains are provided inside the pockets, which are engaged by and support the mass of wood in its advance by the pressure foot and which travel at the same speed as the mass of wood. In order to ensure a uniform pressure of the wood against the stone when two or more pockets are used, when all of the wood in one or a series of pockets has been ground the feed of wood in another pocket (or series of pockets) is automatically started, and at the same time the pressure foot in the empty pocket (or pockets) is retracted to allow refilling; in this way one only of the pockets (or series of pockets) is in operation at the same time, thus insuring a uniform pressure of the wood on the stone and avoiding any danger of racing or wastage of power. The construction of the grinder is described in detail.—A.P.-C.

Manufactured of Groundwood Pulp. H. Nakawmura and Y. Sasaoka. Sexagint (Osaka Celebration), Kyoto, 181-184 (1927). Analyses of groundwood pulp coming directly from the stone and of that collected on the centrifugal pulp screens show that the latter contain more cellulose and less pentosan than the former.—A.P.-C.

Manufacture of Poplar Groundwood. M. Aribert. Papier 31, 405-417 (Apr. 1928). A detailed description, dealing particularly with modern Italian practice.—A.P.-C.

Continuous Pulp Grinding. W. J. Argy. Paper Mill 51, No. 23, 10, 12 (June 9, 1928); Pulp Paper Mag. Can. 26, 853-854 (June 21, 1928). The power consumption per ton of pulp is lower with continuous feed magazine grinders than with hydraulic magazine or pocket grinders, even allowing for the time required for filling the pockets. This has been found to be due to the fact that if the feed is interrupted to approximate the time required to change a hydraulic pocket, the grinding water thins the pulp at the stone surface allowing thin pulp to follow the stone during this period and the pressure of the wood against the stone increases temporarily from 1.5 to 3 times the normal cutting pressure. Indications are given to the care of large stones such as are used in magazine grinders, particularly as regards raising them to the working temperature, which should be done very gradually to prevent breakage.—A.P.-C.

Artificial Grindstones, Anti-Friction Bearings and Vacuum Thickener Developments. W. E. Brawn. Pulp Paper Mag. Can. 26, 235-246 (Feb. 23, 1928); Paper Trade J. 86, No. 8, 191, 193 (Feb. 23, 1928); Paper Mill 51, No. 8, 102, 104, 152 (Feb. 25, 1928). The experience of the Pejepscot Paper Company with the use of artificial grindstones has been that they give an increased production over sandstones, produce more uniform pulp, do not require as frequent sharpening and therefore result in saving in burr costs. Tests run on a given grinder when equipped with sandstone and plain bearings, sandstone and anti-friction bearings, and artificial stone and anti-friction bearings, showed a 7.3 per cent lower power consumption in the last case than in the first, though the freeness in the last case was run considerably higher. The merits of the vacuum type combined decker and saveall are brought out by giving the experience of the Itasca Paper Company when using these on groundwood.—A.P.-C.

Report on the Groundwood Committee of TAPPI. S. C.

Brayton. Paper Trade J. 86, No. 8, 197 (Feb. 23, 1928). A survey of the industry made this year to see to what extent refiners are being used and to learn what other means are being used in disposing of the final groundwood screening rejections showed that apparently most mills are giving considerable thought and attention toward reducing waste due to screening rejections, that the use of refiners to produce stock suitable for newsprint does not seem to be extensive, that the trend seems to be to find use for the repections in the production of by-products and to obtain complete and exact knowledge as to the percentage of rejections being made.—A.P.-C.

Development of Waste Heat Recovery. S. W. Fletcher. Paper Trade J. 86, No. 8, 179, 181 (Feb. 23, 1928) Paper Mill 51 No. 8, 108-112, 136 (Feb. 25, 1928). A brief discussion of the benefits derived from the Briner economizer and from the Baxter grinder exhaust system.—A.P.-C.

Prevention of Corrosion in Groundwood Mills. Arthur Palmer. Pulp Paper Mfg. Can. 26, 334 (March 15, 1928). Corrosion in groundwood mills is due mainly to the presence of acetic acid from the wood. Prevention of corrosion is best obtained by using metals not affected by the acid, notably brass or bronze and, where the material is subjected to considerable strain, chrome steel.—A.P.-C.

Automatic Grinder Development. A. E. Parrett. Paper Trade J. 86, No. 8, 193-197 (Feb. 23, 1928); Paper Mill 51, No. 8, 122-126 (Feb. 25, 1928). A general discussion dealing with the performance and relative merits of the various types of automatic grinders (Watcrous, Warren, Voith and "continuous" combining the best features of the Warren and Voith).—A.P.-C.

Magazine Grinder. O. Andresen. U. S. pat. 1,647,682, Nov. 1, 1927. The feed apparatus, which wholly or partly forms the lower part of the magazine, is mounted on a member adapted to perform a movement in a radial, or approximately radial direction, with regard to the stone, and the member is acted upon by a power mechanism, such as a hydraulic press or the like which acts to press the feeding mechanism as a whole towards the stone. For example, the feeding mechanism is mounted on a pivoted lever, the load on the free end of which is supplied by a hydraulic cylinder and may be varied at will.—A.P.-C.

Feed for Magazine Grinders. G. Nenzel. U. S. pat. 1,652,044 Dec. 6, 1927. The wood is fed against the stone by means of rotating spirals driven through a worm aid worm gear from the rotor of a hydraulic slip coupling, constructed like an ordinary hydraulic brake. The amount of fluid admitted to the coupling is regulated by means of a governor driven from the main grinder shaft so as to increase or decrease the rate of feed in proportion to the increase or decrease in the sped of the stone, thus keeping the load on the stone constant.—A.P.-C.

Method of Process of Cementing Pulpstones. H. O. Keay assignor to Laurentide Co., Ltd. U. S. pat. 1,655,371, Jan. 3, 1928. In order to produce wide-faced stones suitable for use in magazine grinders from thinner stones, the cement used must be insoluble in hot water, must be a strong adhesive, must not crumble away in service (that is, it must contain an abrasive aggregate to do its part in grinding evenly), must be sufficiently hard to reinforce the edges of the stone so as to avoid crushing of the stone when the dressing burr is forced across its face, and it must be sufficiently porous so that glazing will not take place at the grinding surface of the cement. These qualities are obtained by using a resin dissolved in an organic solvent as a binder, and sand as an abrasive aggregate, such as a phenolic-formaldehyde resin dissolved in a furfural solvent for a binder and sand as an abrasive aggregate. The surfaces to be cemented are first thoroughly coated with a solution of phenolic formaldehyde resin in furfural. If the sandstone is exceptionally porous, the preliminary coating is baked 24 to 48 hours at about 130 degrees C. A layer of about 1/16 inch of the abrasive cement is applied, the stones are clamped together and baked about 48 hours at 130 to 150 degrees C., and then 24 hours at 170 degrees C.—A.P.-C.

Apparatus for and Process of Explosion Fibration of Lignocellulose material. W. H. Mason assignor to Mason Fibre Co. U. S. pat. 1,655,618, Jan. 10, 1928. The patent covers various details of construction of the equipment used in carrying out the Mason explosion process of defibering wood. The inlet valve of the "gun" is constructed to be quickly and easily opened and to be pushed against its seat by the pressure inside the "gun." The discharge valve is constructed with a number of tapering ports positioned opposite one another so as to neutralize the force of the recoil, while the outward taper facilities disintegration. The later is further increased by directing the high velocity discharge stream against a roughened or grinding surface. The waste steam from the "guns" is sent to the chip bins to preheat and soften the wood prior to its introducton into the guns.—A.P.-C.

Accomplishments of Research and Technical Departments

SPECIAL INQUIRY NO. 119

A member writes: "In an endeavor to induce my company to establish a department of research and technical control it occurred to me that if I could present a few specific examples of what such a department has accomplished for other companies, I would be better able to 'sell the idea.' This company operates a sulphite, ground wood, and six machine paper mill.

"Because of the present condition of the market, we are branching out into ground wood and sulphife specialties. Our sales organization has been successful over a long period but so many factors are now entering the pulp and paper situation that personally, I believe it will be necessary for us to have a strong technical organization in the future.

"As a director and selling agent for this company possibly I should be better acquainted with the specific accomplishments of technical men in the industry but most of my time has been devoted to selling, consequently I have neglected the manufacturing end which has, until recently, been excellently handled by our veteran staff of pulp and papermakers."

Answers to this inquiry should give very specific facts. The inquirer has been made acquainted with the general improvements that have been brought about by technical men and wants only a report of specific accomplishments, stating the problem solved, its manner of solution, if possible, measurable savings, and the number of men who worked on the problem. A single outstanding example will be sufficient.

All those contributing to this report will, of course, receive a copy of the replies received, in blank. Send replies to Secretary, TAPPI, 18 East 41st street, New York.

Another British TAPPI Corporate Member

The St. Anne's Board Mill Company, Ltd., of St. Anne's Road, Bristol, England, has recently become a corporate member of the Technical Association. This company manufactures box and coated boards and operates three machines. The growing interest on the part of paper board mills in the technical phases of their development has been quite evident during the past year. The opportunities in this field are tremendous. Much progress throughout this entire division of the industry should be evident during the next few years. Mr. Hedley, the managing director of the St. Anne's Board Mills Company, Ltd., will represent the company in the Technical Association.

Rush Work on Harriman Paper Mill

[FROM OUR REGULAR CORRESPONDENT]

HARRIMAN, Tenn., February 4, 1929.—At the present time a force of 105 men are working on the construction of the new $1,000,000 paper mill here, and it is expected that additional forces will be added later on.

The construction work will be rushed and the work completed as soon as possible.

Study of Weller Brittleness Test for Paper*

R. L. Peek, Jr.[1] and J. M. Finch[1]

On the assumption that paper possesses certain basic properties, an expression is theoretically obtained relating the results of the Weller brittleness test to these basic properties, the dimensions of the sample, and the conditions of testing. Experimental data are presented which show that the effect of the sample dimensions and the conditions of testing are substantially as indicated by the theoretical expression. The theory is then employed to interpret the results of the test and to indicate the best form in which these may be expressed. The general question of testing for flexibility and brittleness is considered in the light of this study.

In the testing of paper for many purposes it is now customary to supplement the determination of its tensile strength with other tests intended to more completely indicate the probable behavior of the material in service. A number of these tests are designed to determine the ability of the material to endure bending or similar deformation, and the behavior of paper in this respect is certainly a property second in importance only to its tensile strength. Thus, in the use of paper as cable insulation, it is necessary for the paper to endure the serving operation, in which it is wound spirally over the conductor, and also to endure the deformation involved in the bending of the conductor during splicing. In the latter operation defects are likely to be rendered more apparent, as it is performed after the paper insulation has been dried by a baking operation, which is frequently found to produce embrittlement.

The most important tests designed to determine the behavior of paper in this respect are:

1. Acidity determinations.
2. Folding endurance test.
3. Tearing test.
4. Weller brittleness test.

These tests have been developed on an empirical basis, and difficulty is sometimes experienced in correlating them with each other and with the behavior of the material in service. The first is necessarily indirect in nature, and rests entirely on an empirically determined relation between chemical composition and physical behavior, i.e., that acid papers tend to brittleness on baking. Satisfactory when used for comparative purposes with papers of similar composition, it does not give results paralleling physical behavior when applied to dissimilar papers, particularly when the papers are dyed.

The folding endurance test has the advantage of simulating actual strains to some extent. The results obtained with a given paper, however, vary considerably, and a large number of determinations must be made to obtain a representative average value. The test, particularly when several determinations are made, requires considerable time. Moreover, as the results are expressed in terms of the number of folds required for fracture, and as this value depends on such a number of factors—degree of folding, speed of operation, tension applied to sample—no theoretical relation has been found between these test conditions and the number of folds required for fracture. In consequence, the test conditions must be arbitrarily selected, and there remains considerable doubt as to whether the test affords a fair comparison of brittleness, as distinct from tensile strength, between papers of different sizes or of different strengths. The test is, moreover, essentially a fatigue test, while it is probable that cable papers, at least, fail more commonly from single excessive strains, as in splicing.

The tearing of paper is essentially a fracture in tension, the stress being so applied as to be concentrated on successive small cross sectional areas. The tearing test is of value as simulating conditions under which failure frequently occurs in service, but the conditions are not those of bending, under which the effects of brittleness are apparent. This test is therefore not directly concerned with the properties which determine brittleness.

The Weller test, first described by Bachmann,[2] requires a comparatively short time to carry out, and gives results of smaller average deviation than those of the folding endurance test. It appears to give, when properly carried out, as good or better indications of the behavior of the material in service as the folding endurance test. The simplicity of this test suggested the possibility of analyzing the stress-strain relations it involves, and from such an analysis deducing the significance of the results given by the test and determining the best form in which to express them. Such an analysis is presented in this paper.

Description of the Weller Test

In this test a sample of paper ¼ inch to 1 inch (6.4 mm. to 25.4 mm.) wide and about 6 inches (153 mm.) long is bent over the edge of a steel plate ground to form the half circumference of a circle of about .005 inch (.127 mm.) radius. This plate forms the bar of a stirrup which is held in the lower * jaw of a tensile testing machine; the two free ends of the sample are clamped together in the upper jaw. The sample thus held is stretched by operating the testing machine in the usual way, and the load at which fracture occurs is noted. As the sample only touches the rounded portion of the stirrup bar, the remainder of the plate merely provides strength.

The difference between the load required to fracture a sample of the same dimensions in the ordinary tensile test and half the load required for fracture in the test just described is supposed to be a measure of the brittleness of the paper. Bachmann expressed this difference as a percentage of the load required for fracture in the tensile test, and termed this result the percentage brittleness. It is necessary to relate this figure, or some other expression for the results of the test, to basic properties of the material, if the best use is to be made of the test in predicting the behavior in service of the material tested.

Theoretical Analysis

For the purposes of this analysis it will be convenient to use terms commonly employed in connection with the theory of elasticity, and the assumptions that will be made correspond with a special case of this theory. While it may appear absurd to apply this theory to a material having such a complicated and variable structure as paper, it is to be remembered that no actual material has the properties of an elastic solid, as mathematically defined, and that the latter is merely a structure, whose behavior is amenable to mathematical analysis and similar to the behavior of actual materials through a limited range of conditions. From a consideration of the actual structure of paper, a simple ideal structure can be imagined, having properties similar to those of paper, and the theoretically deduced behavior of such an ideal material under given conditions may be compared with the behavior under the same conditions of the actual material.

The effects of the actual structure of paper on its physical behavior have been discussed by Carson.[3] He has pointed out that the strength of paper depends on the joint effect of the fibers themselves, and of their adherence to each other, partly through interlacing, and partly through the action of binders. The strength of the individual fibers is very much greater than the strength of the whole structure.

[1] Bell Telephone Laboratories, New York, N. Y.

[2] A. E. Bachmann, Paper Trade J. 80, No. 8, p. 51 (1925).

* This is the procedure described by Bachmann (loc. cit.). The authors prefer to secure the stirrup in the upper jaw, and to rebalance the testing machine (Schopper pendulum type) to compensate for the weight of the stirrup.

[3] F. T. Carson, Paper Trade J. 78, No. 12, p. 51 (1924).

As the direction of the fibers is predominantly that of the length of the paper, though some may have a component of direction parallel to the width of the paper (cross machine direction), an ideal structure similar to that of paper should be anisotropic, having properties differing along three orthogonal axes, corresponding to the length, width, and thickness of the paper. Suitable assumptions may be made as to the stress-strain relations along these axes. In this paper only such assumptions will be made as are relevant to an analysis of the Weller brittleness test.

In this test the paper is under tension along the axis of length. The stress intensity (stress per unit of cross sectional area) will probably vary locally, depending on whether the area considered consists predominantly of fiber or of the boundary between fibers. As the fibers are small, the average stress intensity over any small area will be the same for any such small area in a region under uniform tension, and an approximation to actual conditions may be obtained by assuming that the ideal structure is homogeneous, and that the stress intensity will be the same for any unit of area, however small, in a region under uniform tension. The same considerations will apply to stress and strain intensities, whether tensile or shear, along the axes of width and thickness, as well as along the axis of length.

Stress-strain diagrams for paper in tension have been obtained by a number of investigators, e.g., Houston[1] and Bercsi.[2] From such diagrams it is apparent that the stress-strain relation for paper in tension is not one of strict proportionality, but that when the load is large the elongation increases in greater proportion to the load than when the load is small. However, as will appear, it is only necessary in this analysis to consider the upper portion of the stress-strain curve, and for this a straight line relationship will constitute a rough approximation, and it may be assumed that for tension along the axis of length the strain is directly proportional to the stress, when the latter is near to that required for fracture.

To shear paper along planes perpendicular to its surface, as Carson (loc. cit.) has pointed out, requires either that the fibers be themselves sheared, or that they be pulled out from each other, as is done in tearing paper. This latter procedure amounts to successive local fractures under tension along the axis of length, whereas the former, as is well known, requires very great stress. It is therefore a reasonable assumption that the strain due to pure shear stress on planes parallel to the axis of thickness (perpendicular to the surface) is so small that this strain may be ignored.

On the other hand, to shear paper along planes parallel to the surface (perpendicular to the axis of thickness) it is only necessary to overcome the resistance offered by the adherence of the fibers to each other. It will be shown below that in the Weller brittleness test shear of this type must occur. Though there is no evidence available on this point, the assumption will be made for convenience that the strain due to such stress will be directly proportional to the stress.

Finally it will be found convenient to assume that the resistance of paper to compressive stress cting along the axis of thickness is so great as to be ignored. That the resistance of paper to such stress is great is a familiar fact.

For the purposes of this analysis therefore an ideal structure is assumed, having properties which have been shown to be similar to those of paper. In summary, the assumptions made are that:

1. The material is homogeneous and anisotropic, having different properties along three orthogonal axes, corresponding to the length (machine direction), width (cross machine direction), and thickness of the paper.

2. Resistance to compressive stress along the axis of thickness is so great that strain due to such stress may be ignored.

3. Resistance to shear stress acting on planes parallel to the axis of thickness (perpendicular to the surface) is so great that strain due to such stress may be ignored.

4. For tensile stress along the axis of length the strain is proportional to the stress when the latter is large. The proportionality constant will be termed the tensile modulus (S).

5. For shear stress on planes parallel to the surface (perpendicular to the axis of thickness) the strain is proportional to the stress. The proportionality constant will be termed the shear modulus (K).

Fig. 1 shows a section of half the sample in the Weller test. The portion BC is bent over the stirrup bar. (The stirrup bar is shown as of circular section for convenience, the portion of the bar in contact with the sample being a half-circumference.) At A the sample enters the upper jaw of the testing machine. When the sample is stretched there will be a certain total tension, T_B, along AB, and an equal tension on the other half of the sample. Hence the total load applied will be $2\ T_B$. Also, ignoring the slight frictional forces between the stirrup bar and the portion BC, the tension at C will be T_B, as at any other section. The

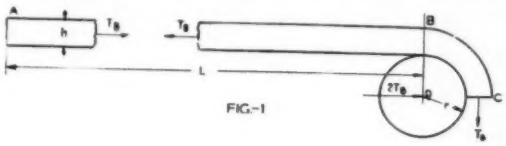


FIG.-1

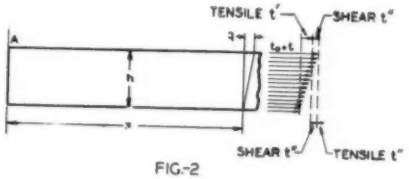


FIG.-2

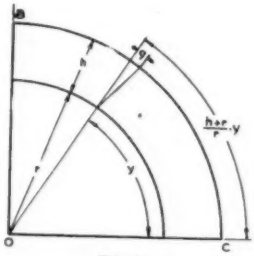


FIG.-3

applied load, $2\ T_B$, will be distributed over the outer half circumference of the stirrup bar, and will give rise to compressive stresses along the axis of thickness and to shear stresses parallel to this axis. On the basis of the assumptions made above, strains due to these stresses may be ignored.

The analysis therefore resolves itself into the determination of the distribution of stress and strain across each cross-section. If the tensile stress were uniformly distributed across any cross-section, it would give rise only to tensile strains. The tensile strain would then be constant from A to B, and from B to C would be greater by the difference between the inside and outside half circumference of the sample. That this cannot be possible is evident from the test dimensions. For a stirrup bar radius of .005 inch (.127 mm.) and a sample thickness of ony .002 inch (.051 mm.), the length of the inner half circumference will be $\Pi \times .005$ inch ($\Pi \times .127$mm.), while that of the outer half circumference will be $\Pi \times .007$ inch ($\Pi \times .178$ mm.), or 40 per cent greater. Paper, of course, will not submit to elongations of such magnitude.

It is therefore evident that the layers of paper slide over each other; i.e., that shear occurs on planes parallel to the surface. If, as has been assumed, shear strain is directly proportional to shear stress, the tension will vary directly with the thickness from a minimum at the inside layer to a maximum at the outside layer, in order that the amount of shear may vary in the same direct proportion. Thus the elongation will be greater in the

[1] P. L. Houston, Bureau of Standards Tech. Papers, No. 187.
[2] J. G. Bercsi, Paper Trade J. 84, No. 7, p. 39 (1927).

outer layers than in the inner, throughout the length of the sample, and the difference in length over the portion BC will be distributed throughout the sample, thus reducing the elongation at any one point to a reasonable value. This distribution may be determined as follows:

Let

t be the difference in tensile stress intensity (stress per unit cross-sectional area) between the inside and outside layers of the sample.

t_o be the stress intensity at the inside layer.

E_1 be the elongation at any point in the outer layer, based on the length corresponding to pure tensile stress t_o.

E_2 be the elongation at any point in the inner layer, based on the length corresponding to pure tensile stress t_o.

S be the modulus of tensile strain along the axis of length.

K be the modulus of longitudinal shear; i.e. shear on planes parallel to the surface.

h be the thickness of the sample.

r be the radius of the stirrup bar.

L be the distance AB (Fig. 1).

On the basis of the assumptions made there is a constant stress intensity t_o in the inner layer, and a constant stress intensity $t_o + t$ in the outer layer. Thus the sample will be throughout under a uniform tensile strain corresponding to t_o; in addition there will be strains corresponding to stresses varying directly with thickness from zero at the inner layer to t at the outer layer. In studying these strains elongations will be considered as referring to the length when the whole sample is under uniform tensile stress t_o, and the co-ordinates employed will refer to distances measured under this condition.

At the point A there will be purely tensile strain equal to t/S (i.e. at A, $E_1 = t/S$, $E_2 = O$). At any other point the elongation in the outer layer will have shifted it with respect to the inner—a shear strain will exist. The shear stress intensity may be written as T"; stress intensities of this amount but of opposite sign must exist in the outer and inner layers. In the outer layer the total stress intensity above T_o must equal t, hence $t = t'' + t'$, where t' is the purely tensile stress intensity in the outer layer (over and above t_o). In the inner layer the stress intensity must always equal t_o; hence in this layer t" must be balanced by an equal and opposite tensile stress intensity, t".

It has just been noted that

$$t = t' + t'' \qquad \text{Eq. 1}$$

From the assumption of a direct proportionality between tensile stress and strain in the upper portion of the stress strain curve,

$$t' = S.E_1 \quad . \qquad \text{Eq. 2}$$
$$t'' = S.E_2 \quad . \qquad \text{Eq. 3}$$

From these three equations, it follows that

$$E_1 + E_2 = \frac{t}{S} \quad . \qquad \text{Eq. 4}$$

At any point in the portion AB (Fig. 2), distant x from A, the corresponding point x + q in the outer layer will be given by

$$q = \int_o^x (1 + E_1)\,dx - \int_o^x (1 + E_2)\,dx = \int_o^x (E_1 - E_2)\,dx \quad . \qquad \text{Eq. 5}$$

The shearing strain will be given by the angle Φ, which (for these small angles) equals q/h. By assumption $t'' = K\Phi$, hence

$$t'' = \frac{K}{h} \int_o^x (E_1 - E_2)\,dx \quad . \qquad \text{Eq. 6}$$

Substituting from Eqs. 3 and 4 in Eq. 6, and differentiating,

$$S\,dE_2 = \frac{K}{h}\left(\frac{t}{S} - 2E_2\right) dx \quad ,$$

or

$$\frac{hS}{K}\frac{dE_2}{dx} + 2E_2 = \frac{t}{S} \quad . \qquad \text{Eq. 7}$$

This differential equation is of simple linear form and integrates to give

$$E_2 = \frac{t}{2S} + C'e^{-\frac{2Kx}{hS}} \quad , \qquad \text{Eq. 8}$$

where C' is the constant of integration, and e the base of the natural system of logarithms. At A, where $x = O$, $E_2 = O$; hence C' must equal t/2S. Substituting this equality,

$$E_2 = \frac{t}{2S}\left(1 - e^{-\frac{2Kx}{hS}}\right) \quad . \qquad \text{Eq. 9}$$

In the portion BC (Fig. 3) let the position of a point under pure tensile strain corresponding to t_o be given by the distance y, measured along the inner circumference from the line OC. For no shear the position of the corresponding point on the outer layer would be $\frac{h+r}{r} \cdot y$. The relations of Eq. 1, 2, 3, and 4 will apply equally here. The shear strain, giving t" the same sense as for AB, will be given by

$$t'' = \frac{Kq}{h} = \frac{K}{h}\left[\frac{h}{r} \cdot y - \int_o^y (1 + E_1)\,dy - \int_o^y (1 + E_2)\,dy\right]$$

$$= \frac{K}{h}\left(\frac{h}{r}\,y - \int_o^y (E_1 - E_2)\,dy\right) \quad . \qquad \text{Eq. 10}$$

Substituting for t" from Eq. 3, for E_1 from Eq. 4, differentiating, and rearranging terms,

$$\frac{hS}{K}\frac{dE_2}{dy} - 2E_2 = \left(\frac{h}{r} - \frac{t}{S}\right) \quad . \qquad \text{Eq. 11}$$

This may be integrated in the same way as Eq. 7 and yields:

$$E_2 = \frac{1}{2}\left(\frac{t}{S} - \frac{h}{r}\right) + C''e^{\frac{2Ky}{hS}} \quad , \qquad \text{Eq. 12}$$

where C" is the constant of integration. At C, $y = O$, and as at A, $E_1 = t/S$, $E_2 = O$. Hence C" equals $-1/2\ (t/S - h/r)$. Hence,

$$E_2 = \frac{1}{2}\left(\frac{t}{S} - \frac{h}{r}\right)\left(1 - e^{\frac{2Ky}{hS}}\right) \quad . \qquad \text{Eq. 13}$$

Both Eq. 9 and Eq. 13 apply at the point B. Here $x = L$, and $y = \frac{\Pi r}{2}$. Substituting these values in the two equations, and equating the values of E_2 at B thus obtained, there is given

$$\frac{t}{2S}\left(1 - e^{-\frac{2KL}{hS}}\right) = \frac{1}{2}\left(\frac{t}{S} - \frac{h}{r}\right)\left(1 - e^{\frac{K\Pi r}{hS}}\right) \quad .$$

From which, by rearranging terms,

$$t = S\,\frac{h}{r}\,\frac{1 - e^{-\frac{K\Pi r}{hS}}}{1 - e^{-\frac{K}{hS}(2L + \Pi r)}} \quad . \qquad \text{Eq. 14}$$

This last equation gives a value of t strictly true for the ideal structure assumed. In applying this conclusion to the actual material (paper), whose properties only approximately agree with the assumptions made, this equation can be in any case only an approximation, and it is therefore reasonable to simplify Eq. 14 by such further approximations as will involve only small changes. The term $2L + \Pi r$ is strictly twice the distance ABC measured along the inner edge of the sample when under tension: it will be sufficient to take this as twice the distance from the upper jaw to the bottom of the stirrup bar when the sample is clamped at the start of the test. But for practical purposes this quantity is so large compared to Πr, that unless $e^{-\frac{K\Pi r}{hS}}$ is nearly equal to unity, a case of little interest (as will appear), the term $e^{-\frac{K}{hS}(2L + \Pi r)}$ will be substantially zero. Hence, for a working form of the equation, an adequate approximation is given by

$$t = S\,\frac{h}{r}\left(1 - e^{-\frac{K\Pi r}{hS}}\right) \quad . \qquad \text{Eq. 15}$$

To relate the quantity t, whose theoretical value is given by the last equation, to the quantities measured in the test, it is necessary to assume, as it is reasonable to do, that the tensile stress intensity at fracture in this test is substantially the same as that at which fracture occurs in the ordinary tensile test. This last quan-

tity is given by $t_M = T_M/wh$, where T_M is the total load required for fracture in the ordinary tensile test, w and h being the width and thickness of the sample respectively. From the assumption just made, t_M equals the stress intensity at the outer layer in the Weller test, or

$$t_M = t_o + t \quad . \qquad \text{Eq. 16}$$

As the stress intensity in the Weller test varies directly from t_o at the inner layer to $t_o + t$ at the outer, the average stress intensity is given by

$$t_B = t_o + t/2 \quad . \qquad \text{Eq. 17}$$

where $t_B = T_B/wh$, T_B being one-half the total load required for fracture in this test, or the total load on either half of the sample. From Eqs. 16 and 17,

$$t = 2(t_M - t_B) \qquad \text{Eq. 18}$$

$$= \frac{2(T_M - T_B)}{wh} \quad . \qquad \text{Eq. 18A}$$

the second form holding if the tensile and Weller tests are made on samples of the same cross section.

Experimental

The theory above leads to the conclusion that the quantity t, obtained from experimental data by means of Eq. 18, should be related to the test dimensions and the constants S and K by the relation of Eq. 15. To determine the two constants two values of t must be obtained from determinations employing two stirrup bars of different radii. Let these two values of t be t_1 and t_2, corresponding to values of $\frac{h}{r}$ of $z_1 (= \frac{h}{r_1})$ and $z_2 (= \frac{h}{r_2})$ respectively. Then from Eq. 15

$$\frac{t_1}{t_2} = \frac{z_1}{z_2} \cdot \frac{(1 - e^{-K\Pi/Sz_1})}{(1 - e^{-K\Pi/Sz_2})} \quad . \qquad \text{Eq. 19}$$

For any given ratio of z_1/z_2, a curve of t_1/t_2 vs $K\Pi/Sz_1$ can be plotted from Eq. 19. Several such curves have been plotted in Fig. 4. Values of t_1 and t_2 having been obtained, the values of $K\Pi/Sz_1$, corresponding to their ratio may be read from the curve corresponding to the value of z_1/z_2 used. Then K/S is given, and by substitution of this with corresponding values of t and z in Eq. 15A, the value of S, and thus also of K may be readily computed.

Thus, values of K and S satisfying Eq. 15 can be found for any two determinations of t with different stirrup bars. If the values of K and S thus determined are real and positive, no further check on the theory is given by two determinations. In the experimental work therefore determinations were made on each paper with three different stirrup bars having diameters of .004 inch (.102 mm.), .008 inch (.204 mm.), and .012 inch (.305 mm.) respectively. Tests were made on three papers, viz: a manila cable paper, containing 20 per cent cotton (Paper C), a manila cable paper containing 40 per cent wood (Paper W), and a bond paper (Paper B).

Tests were made on different sizes of each paper, the samples of which are listed in Table 1. All samples of a given size and kind were from the same lot, except for Paper C—3.5, of which two lots were available, C—3.5 and C—3.5a. All samples were tested before and after a twenty-four hour bake. The effect of baking is to change the characteristics of the paper, generally in such a way as to make it more brittle. All samples were tested with each of the three stirrup bars listed above. Runs were made for every sample with a distance between stirrup and upper jaw (L') of 3.95 inches (100 mm.). Duplicate runs were made for a number of cases with a distance L' of 7.08 inches (180 mm.). In testing the relative humidity was held at 42 ± 4 per cent and the temperature at 72 ± 1 degree F.

For every value ten determinations were made, and the mean value computed. In Table 1 are listed such mean values of T_M, the total load at fracture in the tensile test, h, the thickness of each sample, and $2T_B$, the total load at fracture in the brittleness test for the stirrup under which the value is listed. All samples were of the same width, .438 inch (11.1 mm.). After each value

TABLE 1
EXPERIMENTAL DATA

Sample *	Tensile Test T_M (kgs.)	D	Brittleness Test 4 mil. Stirrup $2T_B$ (kgs.)	D	Brittleness Test 8 mil. Stirrup $2T_B$ (kgs.)	D	Brittleness Test 12 mil. Stirrup $2T_B$ (kgs.)	D	Thickness h(mm.)
C—2.5—B—100	5.24	.19	8.07	.28	9.26	.44	10.2	.40	.0604
C—2.5—A—100	3.49	.31	0.47	.09	1.21	.59	2.04	.38	.0597
C—3.5—B—100	7.32	.30	8.24	.41	10.43	.58	11.6	.36	.0839
C—3.5—A—100	7.16	.73	7.35	.46	9.57	.43	11.0	.64	.0912
C—3.5a—B—100	7.31	.47	9.46	.48	10.84	.65	12.60	.74	.0890
C—3.5a—B—180	7.57	.26	8.90	.58	10.59	.67	12.28	.80	.0917
C—3.5a—A—100	7.00	.36	5.70	.74	7.59	.31	8.53	.48	.0917
C—3.5a—A—180	6.84	.33	5.12	.52	7.15	.68	8.76	.49	.0911
W—3.5—B—100	8.50	.52	9.60	.54	12.59	.71	13.56	.55	.0894
W—3.5—B—180	8.24	.44	7.32	1.12	10.17	1.19	12.50	.58	.0898
W—3.5—A—100	8.70	.42	6.73	1.18	9.00	.64	10.47	.78	.0898
W—3.5—A—180	7.94	.55	6.01	.63	7.67	.64	9.71	.85	.0895
W—4—B—100	10.02	.74	10.04	.47	12.69	.85	13.73	1.28	.0996
W—4—B—180	10.26	.39	9.98	.84	12.11	.69	13.09	.91	.0992
W—4—A—100	10.23	.38	8.05	.47	9.68	.44	11.19	.79	.0999
W—4—A—180	9.89	.59	8.26	.42	9.58	.42	11.87	.57	.1000
W—5—B—100	11.80	.44	13.12	.76	16.62	.98	17.21	.93	.129
W—5—B—180	11.22	.74	12.92	1.02	15.36	.71	17.51	1.39	.130
W—5—A—100	9.95	.89	9.15	.79	10.95	.74	11.53	.82	.130
W—6—B—100	14.31	.59	13.73	.87	16.67	1.16	18.57	.71	.150
W—6—A—100	13.80	.86	10.57	1.21	12.28	.42	13.29	.59	.150
W—9—B—100	17.25	.74	17.77	1.47	19.22	.94	20.20	1.68	.222
W—9—A—100	16.43	1.04	11.63	.92	13.86	.99	14.42	.86	.218
B—13—B—100	4.93	.23	5.06	.55	5.89	.51	6.43	.81	.0612
B—13—B—180	4.45	.19	4.74	.60	6.92	.38	6.64	.30	.0604
B—13—A—100	3.92	.20	2.74	.41	3.85	.60	5.14	.29	.0604
B—13—A—180	4.43	.11	2.83	.41	3.98	.69	4.48	.66	.0603
B—16—B—100	6.06	.31	4.52	.69	7.35	.61	7.94	1.01	.6715
B—16—A—100	5.11	.37	2.79	.47	4.76	.97	5.74	.65	.0699
B—20—B—100	6.96	.56	5.71	.59	7.17	.62	7.73	.58	.0918
B—20—B—180	7.15	.26	7.15	.45	7.13	.90	9.42	.60	.0908
B—20—A—100	6.41	.33	2.62	.62	3.97	.59	3.60	.70	.0909
B—20—A—180	6.11	.33	3.36	.31	4.86	.23	4.91	.75	.0904
B—24—B—100	7.83	.20	7.88	.44	9.88	.68	10.33	1.03	.1020
B—24—A—100	6.79	.22	2.27	.22	2.79	.84	4.87	.84	.1050

* Note: First letter of sample symbol indicates type of paper: C = cotton, W = wood, B = bond. Number following gives thickness of paper in mils. for cable papers, substance number for bond papers. Letter following gives condition: B = before baking, A = after baking. Final number is sample length, 100 mm. or 180 mm.

of T_M or of $2T_B$ is given, under D, the average deviation of the individual measurements from the mean value listed. The average deviation is taken as the mean of the differences, regardless of sign, between the individual measurements and their mean value. In the case of these data, where only ten measurements of each quantity were available, the average deviation was taken as the simplest reasonable measure of the probable range of values within which the quantity may lie.

From the values given in Table 1, the corresponding values of t have been computed by means of Eq. 18 and are listed in Table 2, together with values for t_M, the mean stress intensity at fracture in the tensile test, for which the values of D have been taken as the values of D for T_M divided by wh. The deviation for $(T_M - T_B)$ has been taken as half the sum of the deviations for T_M and T_B, and hence the deviation (D) for t, as given in Table 2, has been taken as the sum just mentioned divided by wh (see Eq. 18).

For each sample listed a plot has been made of values of t against corresponding values of $z (= h/r)$. For each sample there were available three points, representing values obtained with the three stirrup bars used. For each set of points a curve has been drawn which is a plot of Eq. 15 with values of K and S so chosen as to make the curve the closest fit to the three points. The values of K and S were obtained by trial and error, obtaining the first approximation as the values fitting two of the points by the method outlined above. The results obtained with samples of different lengths and before and after baking were plotted separately.

The curves so obtained are not included here, but the values of S and K for these curves are listed in Table 3. Figures there given in rounded brackets ( ) are those for which the average of the differences between the experimental points and the curve plotted is greater than one-half the mean of the average deviations (D) of the values in question—fair agreement. The values given

without brackets show less variation than this between the experimental points and the curve—good agreement. The figures included in square brackets refer to curves in which at least one of the experimental points lay further from the curve than its average deviation—poor agreement. Figures marked with an exclamation point refer to experimental values wholly inconsistent with the rest of the data, where for one pair of experimental points that determination having the larger values of z has the smaller value of t.

In so far as the effect of the radius of the stirrup bar on the brittleness figure is concerned, the agreement of the theory with the experimental data can be directly judged from Table 3. Of the thirty-five curves plotted, twenty-six could be fitted with curves of the type of Eq. 15 with good agreement, as defined above, two with fair agreement, and seven with poor agreement.

In considering the measure of agreement found, it should be noted that Eq. 15 in every case fits the limiting case when z is zero (r very large). In view of this fact and the known variability of any sample of paper, the effect of which is roughly indicated by the deviations listed, the agreement of the experimental results with the theory may be considered good in so far as the effect of the stirrup bar radius on the results is considered.

The effect of the thickness (h) of the paper cannot be determined so readily as can that of the stirrup bar radius, due to the fact that it is practically impossible to obtain two papers of different thickness that are yet physically identical, as variations in character always appear in different lots of paper, though made from the same stock. The papers tested, in each of the three types, were selected as being of the same stock, and as having as nearly the same apparent destiny and breaking stress intensity (tensile) as could be obtained, but as is evident in Table 2, there was considerable deviation in the latter respect, as there was also in the other. In consequence it is to be expected that the moduli K and S may vary to the same or to a greater extent, and that the brittleness figures obtained will not show the same agreement with Eq. 15 that might be expected if the papers tested were identical.

The comparison may be first restricted to the unbaked papers for the samples of 3.95 inches (100 mm.) length. Referring to Table 3 the values of S and K obtained should be constant for each type of paper, if the theory were rigidly applicable. So far as K is concerned, this condition is nearly fulfilled. The values of S are more irregular, but the variations indicate no definite trend, showing neither a consistent increase nor decrease as the thickness increases. That these variations in S are not of as great significance as may at first appear is shown by Figs. 5 and 6. In these figures values of t have been plotted as vertical lines of a length corresponding to the range of values, as indicated by the average deviation, within which the quantity must be. In Fig. 5 all values for t obtained with unbaked 100 mm. samples of paper W have been plotted against corresponding values of z. It is apparent that the curve which has been plotted from Eq. 15 as the closest fit lies within the range of error of most of the points. The constants for the plotted curve are $S = 7.6$ and $K = 3.1$, which are similar to the mean values of these quantities for the curves corresponding to the separate groups included in Fig. 5. In Fig. 6 values of t are plotted against z for the unbaked 100 mm. samples of paper B. Here even better agreement is obtained. The curve plotted in Fig. 6 has constants $S = 13.3$ and $K = 3.01$, which again are similar to the mean values of these quantities for the four samples represented. Of the cotton papers it may be

TABLE 3
SUMMARY OF CURVES PLOTTED

Sample	Before baking: L′ = 100 mm. S	K	Before baking: L′ = 180 mm. S	K	After baking: L′ = 100 S	K	After baking: L′ = 180 S	K
C—2.5	[2.74	3.66]			32.7	3.62		
C—3.5	6.20	3.62			6.00	3.50		
C—3.5a	4.00	3.29	5.08	3.32	11.30	3.27	9.37	3.76
W—3.5	5.90	3.97	7.45	5.01	14.9	4.36	13.45	4.18
W—4	10.53	3.64	14.72	3.70	[22.25	4.18]	15.72	4.14
W—5	(5.95	3.05)	4.50	3.18	12.15	2.67		
W—6	8.05	3.54			21.4	3.52		
W—9	9.68	2.42			13.06	3.04		
B—13	18.00	2.71	[6.58	3.91] !	11.65	3.61	23.00	3.48
B—16	[11.90	4.44]			14.75	4.04		
B—20	16.30	2.95	[12.40	2.86] !	[33.9	3.59] !	[23.80	3.09] !
B—24	9.15	2.68			(19.70	3.63)		

Figures marked with an exclamation mark (!) pertain to curves for which experimental data show obvious inconsistencies.
Figures enclosed in square brackets [ ] pertain to curves showing poor agreement with experimental data.
Figures enclosed in rounded brackets ( ) pertain to curves showing fair agreement with experimental data.
Other figures pertain to curves showing good agreement with experimental data.

TABLE 2—RESULTS COMPUTED

Sample	Tensile Test: tM (kg./sq. mm.)	D	Brittleness Test: 4 mil. stirrup t (kg./sq. mm.)	D	z	8 mil. stirrup t (kg./sq. mm.)	D	z	12 mil. stirrup t (kg./sq. mm.)	D	z
C—2.5—B—100	7.81	.19	3.58	.49	1.19	1.82	.61	.595	.417	.60	.397
C—2.5—A—100	5.26	.31	9.80	.54	1.18	8.69	.94	.588	7.45	.76	.392
C—3.5—B—100	7.85	.30	6.87	.54	1.65	4.51	.64	.826	3.26	.52	.551
C—3.5—A—100	7.09	.73	6.89	.96	1.80	4.69	.96	.898	3.29	1.04	.599
C—3.5a—B—100	7.39	.47	5.22	.72	1.75	3.82	.80	.876	2.04	.86	.584
C—3.5a—B—180	7.42	.26	6.12	.56	1.81	4.45	.60	.903	2.80	.66	.602
C—3.5a—A—100	6.86	.36	8.14	.76	1.80	6.27	.52	.900	5.35	.60	.600
C—3.5a—A—180	6.77	.33	8.48	.58	1.79	6.46	.68	.897	4.87	.58	.598
W—3.5—B—100	8.56	.52	7.45	.84	1.76	4.43	.88	.880	3.46	.80	.587
W—3.5—B—180	8.26	.44	9.18	1.00	1.77	6.31	1.04	.884	3.99	.78	.590
W—3.5—A—100	8.71	.42	10.7	1.02	1.77	8.41	.74	.885	6.93	.82	.590
W—3.5—A—180	7.99	.55	9.92	.88	1.76	8.25	.88	.881	6.20	.98	.588
W—4—B—100	9.03	.74	9.01	.96	1.96	6.61	1.04	.984	5.68	1.24	.654
W—4—B—180	9.36	.39	9.65	.74	1.95	7.71	.66	.976	6.82	.78	.651
W—4—A—100	9.19	.38	11.1	.56	1.97	10.5	.54	.983	8.29	.70	.656
W—4—A—180	8.91	.59	10.4	.72	1.97	9.19	.72	.984	7.12	.82	.657
W—5—B—100	8.25	.44	7.33	.58	2.54	4.88	.66	1.27	4.46	1.62	.847
W—5—B—180	7.79	.74	6.58	.88	2.56	4.89	.76	1.28	3.39	1.00	.854
W—5—A—100	6.91	.89	7.46	.88	2.56	6.21	.88	1.28	5.81	.90	.854
W—6—B—100	8.56	.59	8.90	.62	2.95	7.13	.70	1.48	6.00	.56	.985
W—6—A—100	8.26	.86	10.2	.88	2.95	9.16	.64	1.48	8.56	.70	.985
W—9—B—100	7.00	.74	6.81	.60	4.37	6.23	.50	2.18	5.83	.64	1.46
W—9—A—100	6.78	1.04	8.76	.62	4.30	7.81	.64	2.15	7.60	.62	1.43
B—13—B—100	7.25	.23	7.06	.74	1.20	5.82	.70	.602	5.03	.94	.402
B—13—B—180	6.63	.19	6.20	.74	1.19	2.95	.56	.594	3.37	.50	.397
B—13—A—100	5.83	.20	7.60	.60	1.19	5.93	.74	.594	4.02	.50	.397
B—13—A—180	6.61	.11	8.99	.48	1.19	7.28	.68	.594	6.54	.66	.396
B—16—B—100	7.63	.31	9.57	.84	1.41	6.00	.78	.704	5.26	1.04	.469
B—16—A—100	6.58	.37	9.55	.78	1.38	7.03	1.10	.688	5.77	.90	.459
B—20—B—100	6.82	.56	8.04	.86	1.81	6.61	.88	.904	6.06	.86	.603
B—20—B—180	7.09	.26	7.08	.48	1.79	7.10	.72	.894	4.84	.56	.596
B—20—A—100	6.35	.33	10.10	.64	1.79	8.75	.62	.895	9.13	.68	.597
B—20—A—180	6.09	.33	8.82	.48	1.78	7.33	.44	.890	7.27	.70	.594
B—24—B—100	6.91	.20	6.87	.38	2.01	5.10	.48	1.003	4.70	.64	.670
B—24—A—100	5.82	.22	9.68	.30	2.07	9.24	.54	1.03	7.46	.54	.689

noted that the values of S obtained with the two different 3.5 mil papers differ as much from each other as their mean does from the value of S for the 2.5 mil paper.

A somewhat greater irregularity is noticed with the baked papers when examined in the manner applied above to the unbaked papers. This is to be expected from the fact that baking would be likely to affect different samples, particularly when of different thicknesses, to different degrees. It appears therefore that the effect of the sample thickness on the brittleness figure is as predicted by the theory, but that the variations in the character of the paper from sample to sample make it difficult to obtain absolutely definite evidence in regard to this point.

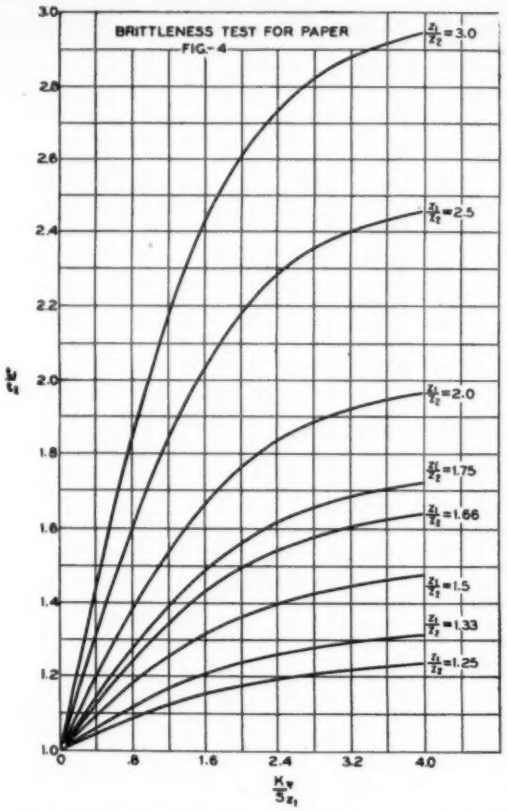
According to the theory, the effect of the length of the sample on the brittleness figure should be negligible. From an examination of Tables 2 and 3 it appears that the results on samples of different lengths frequently differ, but a careful examination of the figures listed shows that the variations are as much in one direction as in the other, and therefore indicate no definite trend, but may be due to variations in the samples rather than to any effect of the length as such. This conclusion is strengthened by the fact that from Table 2 it is apparent that the differences between values of t for samples of different lengths are in general less than the average deviations for the corresponding values of t.

Discussion of Weller Test

From the study made by Carson (loc. cit.) of the structure of paper and its physical properties, conclusions may be drawn which are useful in interpreting the quantities measured in the Weller test, and which may also serve to explain some of the irregularities noted above in connection with the experimental data. In tension, the strength of the paper, as is pointed out in the article referred to, depends jointly on the strength of the fibers themselves and on their adherence to each other. The value of the tensile modulus S will therefore depend on both these properties. In shear, however, only the adherence of the fibers to each other is concerned, and therefore the shear modulus K will depend on this property alone. Carson considers these forces of adhesion to be frictional in nature: it seems probable however, that they are partly elastic, as is suggested by the elasticity of paper when not too sharply bent. It is probable, however, that the stress-strain relation in shear, which represents the action of these forces, is not one of direct proportionality, and will also be dependent upon the rate of deformation. Hence the value of K, representing the average value of the stress-strain ratio over a range dependent upon the conditions of the particular test, may vary somewhat in amount, and produce variations in the results other than those indicated by the theory. Such variations, of course may appear in the computed value of S as well as in the computed value of K, when both values are obtained by a computation based upon the theory.

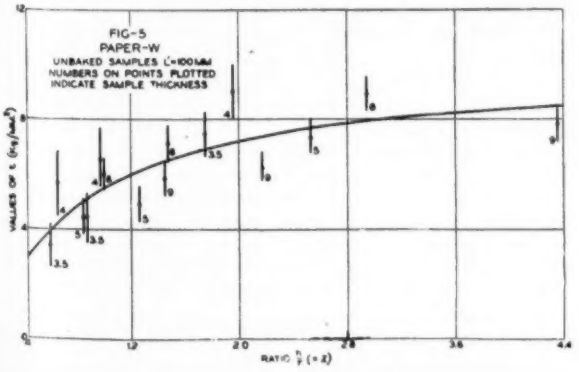
The same considerations apply to the stress strain relation in tension, which indeed is shown by experimental evidence, as noted above, not to be strictly of direct proportionality. This factor may also account for irregularities in the values of both S and K as computed from the results of the Weller test.

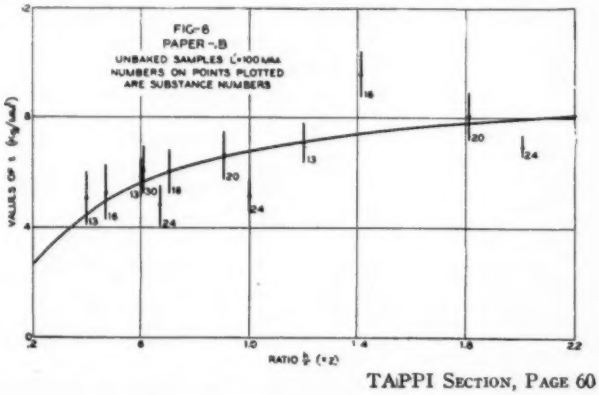
Carson has also pointed out that increasing the cross section of



a sample is equivalent to decreasing the rate of loading, as the effect is to decrease the amount of load added per unit area for a given amount of jaw movement. This resultant change in the rate of loading may be responsible for some of the variations noted in results obtained with samples of different thickness. Increasing the length of the sample also effectively decreases the rate of loading, as decreasing the fractional elongation resulting from a given amount of jaw movement. This effect may be involved in some of the irregularities noted with samples of different lengths.

It might be possible to distinguish the effects just discussed by obtaining measurements of higher precision than those listed here, as might perhaps be done by increasing the number of determinations of each quantity measured, or by employing samples of papers showing less variability. It is evident however that in these measurements, which were obtained to as high a degree of precision as could be conveniently obtained in practical tests, the variations in the results due to the variations in the samples themselves are so great as to make it impossible to distinguish definitely the effect of the changes in the rate of loading due to the changes in the dimensions of the sample. Hence it is apparent that





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the variations in paper are too great to justify any more than an approximate analysis of its behavior, and that for practical purposes it is sufficient to assume such quantities as S and K to be constants which may only be approximately evaluated, the errors due to such assumptions being in any case no greater than the uncertainties of measurement due to the variability of the material.

It is apparent from the theory given above that the brittleness index proposed by Bachmann, $T_M - T_B/T_M$, is equal to one-half the reciprocal of $T_{M/2(T_M - T_B)}$, which latter quantity equals t_M/t, or the ratio of the tensile strength (per unit cross sectional area) to the difference in stress intensity between the inside and outside layers developed in the Weller test. Thus analyzed, it appears that this method of expressing the results of the Weller test has no special merit, though perhaps it is as good as any other. The value of the test consists in measuring the quantity t—the additional stress due to bending—and perhaps the result of the test might be better expressed simply as the value of t_B, the stress intensity at fracture in the Weller test, which evidently measures the strength of the paper in excess of that required to endure the stress due to bending.

In whatever form the results are expressed, it is evident that the bending should be such as to make the results of tests on different samples comparable. From the analysis given above it is evident that this condition will be more nearly satisfied if $z(=\frac{h}{r})$ is always constant, i.e., if each sample is tested with a stirrup bar whose radius bears a constant ratio to the thickness of the sample. If but one stirrup bar is to be used for all tests, one of the smallest practical radius will give the best comparison, as the larger the value of $z(=\frac{h}{r})$, the less the variation of t with a given change in z, as is apparent from Eq. 15 and Figs. 5 and 6.

For some purposes it may be desirable to obtain a more complete knowledge of the material, and this may be done by testing with two stirrup bars and computing the values of S and K in the manner described above. From the value of K there may be immediately obtained the limiting value of t when z is very large (i.e., for very sharp bending, when r approaches zero). For, substituting in Eq. 15 the expansion in series for the exponential term,

$$t = Sz(1 - 1 + \frac{KII}{Sz} - \frac{1}{2'.}(\frac{KII}{Sz})^2 + \frac{1}{3'.}(\frac{KII}{Sz})^3 \ldots .)$$

$$= KII(1 \frac{1}{2'.} - (\frac{KII}{Sz}) + \frac{1}{3'.}(\frac{KII}{Sz})^2 - \frac{1}{4'.}(\frac{KII}{Sz})^3 \ldots .)$$

Hence when r approaches zero, and z therefore approaches infinity,

$$\text{Lt.}_{z \to \infty} t = KII \qquad \text{Eq. 20}$$

It is therefore evident that KII is the maximum value of t, and if this quantity is less than $2t_M$,* the paper cannot be fractured by pure bending, however severe. The quantity $t_M - \frac{KII}{2}$ is the limiting value of t_B, and represents the strength of the paper in excess of that required for sharp bending. A complete statement of the characteristics of the paper requires the determination of both S and K, the limiting value of t depending on the latter, and how readily this limit is approached as the sharpness of bending increases depending on the former. The quantity K, the modulus of longitudinal shear, is also of significance as an index of flexibility, regardless of fracture, as the ease of bending will evidently be inversely proportional to this quantity.

Determinations of K and S by the method here discussed may also serve a useful purpose in the experimental study of the physical characteristics of paper in general. Bachmann noted that the percentage brittleness of paper decreased with increasing humidity. This is in agreement with Carson's theoretical discussion of the structure of paper, where he postulates that increasing moisture decreases the adherence of the fibers to each other. Such a change would result in a decrease in the value of K, and hence in a decrease of the value of t, and therefore of the percentage brittleness. Also in the results reported here it may be noted (Table 3) that the effect of baking has been to increase the values of S greatly in every case, while the values of K have been but slightly changed by this treatment. This indicates that the effect of baking must be largely confined to the fibers themselves, whose properties, together with the adherence between fibers, determine S, while K is wholly determined by the adherence between fibers, which must therefore be little affected by baking.

Conclusion

The purpose of any test is to predict the behavior in service of the material tested. As the strains to which the material may be subject vary with the type of service, it is necessary to either select a test that simulates the particular service condition, or to be able to deduce from the test fundamental properties of the material from which its behavior under particular conditions may be predicted. It has been the aim of this paper to show how the latter procedure may be followed with respect to the Weller test.

An equation has been developed theoretically relating the properties of an idealized paper to the conditions of the test and the approximate validity of the theoretical treatment has been demonstrated by the approximate conformance of experimental results to the theory.

For many uses of paper, failure in bending will be due to single sharp bends as in serving and splicing operations for cable paper. The residual strength (per unit cross-sectional area) over and above that required to resist the stress of bending is given by the quantity t_B, the stress intensity at fracture in the Weller test. The quantity t, the difference between the stress intensity in the inside and outside layers of the sample in the Wller test, is equal to $\frac{1}{2}(t_M - t_B)$, where t_M is the stress intensity at fracture in the ordinary tensile test. This quantity t is, according to the theory here developed, principally dependent on S and K, which are characteristic constants of the material, S being the slope of the upper portion of the tensile stress-strain curve, while K is the modulus of longitudinal shear. These quantities may be determined by testing each sample with at least two stirrup bars of different sizes and employing the methods of computation described above. The maximum value of t is given by KII, and a low value of K is therefore a desideratum for paper which must submit to severe bending. Whether this limiting value of t is approached rapidly or not as the sharpness of bending is increased depends upon the value of S.

The results of the test may be perhaps most usefully expressed simply in terms of t_B, but the analysis shows that the Bachmann index, $T_M - T_B/T_B$ should increase, as postulated, with increasing tendency to fracture in bending.

In conclusion it should be emphasized that the theory here given rests upon a series of assumptions of only approximate validity. The experimental results conform sufficiently to those theoretically predicted to indicate that the treatment relates the quantities measured by the test to the factors upon which they are principally dependent and thus makes possible an interpretation of the relationships involved, approximately correct in essentials, although many minor factors are concededly neglected. The complexity of the structure of paper suggests that any more accurate treatment would be exceedingly difficult, while the variability of the material is so great as to make it futile to attempt too precise a determination of any of its properties.

The authors are indebted to Dr. A. C. Walker of these laboratories for many helpful suggestions in connection with this work.

* The limiting case $t = 2tM$ requires the inner layer to be under compressive stress equal and opposite to the tensile stress (tM) in the outside layer. Though this condition is possible, according to the theory given in this paper, it seems unlikely that such compressive stresses are actually developed in the Weller test. They may, however, appear in an actual case in which the radius of bending approaches zero, i.e., when paper is folded and creased by hand.

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Bank Credit and Budgetary Control*

By Michael H. Cahill†

Speaking to a group of specialists about their particular specialty is not the most enviable task in the world, and yet it seems to me that this is the task which has been set for me this evening. The only saving feature on this occasion is the fact that I am to be permitted to give the banker's viewpoint on the subject assigned—otherwise I might hesitate to discuss financial credits before this gathering.

It is rather difficult to explain by concrete example just what the viewpoint of the banker is regarding credits, for the reason that no two credit cases are more alike than are two individuals. While in two given cases the balance sheets may in some respects be similar, yet the basic foundations and supporting facts are bound to be dissimilar.

Regardless of any and all theoretical formulas, we must concede that our entire credit structure is based upon one definite proposition and that is confidence in our fellow-man.

Theory Upon Which Credit Is Founded

It seems to me that we can sum up briefly, but explicitly and correctly, the entire theory upon which all credit is founded in the following words:

1—Confidence in man's character and integrity.
2—Confidence in man's resources and ability to pay.
3—Confidence in the stability of the locality in which he conducts his business.

Credit is the greatest asset from an economic standpoint in the world, because it forms the basic foundation upon which all commercial, industrial and financial activity is carried on. On the other hand, it is a very sensitive proposition which can be more easily destroyed than created. Someone has compared injured credit to a broken piece of beautiful porcelain. You may put it together again and it may seem as good as of old, but the cracks are there and you eannot forget that it was broken.

Credit is the correlative of capital. It liquifies capital and is in turn dependent upon capital for its redemption. A peculiarity to be found in the extension of credits is the fact that the mere granting of credit in itself increases the demand for credits. This is true all along the line, from the banker to the manufacturer and on to the distributor.

The Superstructure of Credit

Every credit transaction is supposed in theory to be based upon a cash equivalent. The only security, however, that is absolutely liquid is cash itself, and that is the reason why money is based upon the unchanging standard of gold as a measure of the value of wealth. It is upon this standard as a foundation that we must at all times erect a superstructure for credit. It is vitally important, therefore, that all business concerns keep their affairs in such shape that the cash standard of value, as measured against assets, will always find ample evidence of ability to convert these assets readily into cash to pay debts, and this is the fact that the banker must keep in mind when considering a credit application.

Credit making is an estimate or opinion of future commercial conditions and of the ability and intention of business men to carry out their business contracts. The man who buys on credit is basing his success upon the anticipation of future profits: Therefore, the man who sells credit, as does the banker, must have the vision to foresee and analyze carefully and correctly the future business conditions which are to bring these profits.

How are we to determine the future conditions? We have but one way to judge the future and that is by analyzing the past. The pendulum swings both ways. This rule is especially applicable to industrial activities because an industrial operation of today may have seemed improbable several years ago. Therefore, in order for the banker to make a proper decision regarding credits, it is absolutely necessary that he make a careful and thorough analysis of current economic conditions affecting the particular concern which is asking for credit.

Over-Extension of Credit

The greatest danger existing today in our complex system of finance, and one with which the banker has to deal, is the danger of over-extension of credit. This danger applies equally to commercial and to manufacturing concerns. There is but one safeguard with which this danger can be avoided and that is by the exercise of conservation. That is why a bank forms the most important link in the chain of credits as it is the one institution which can apply brakes of conservation more effectively than any other organization.

Recognizing the bank as a quasi-public institution, however, we must concede that it has a two-fold duty to perform. It must be ready to extend to the public, so far as is feasible and consistent with good banking, the credit service to which the public is entitled. On the other hand, as it is dealing in a large part with the funds of its depositors and therefore acting to a certain extent in the capacity of a trustee, it is duty bound to exercise greater care in the extension of credits than any other institution.

* National Association of Cost Accountants Bulletin.
† Pres., Utica National Bank & Trust Co.

This naturally brings us to the question, What information must the banker have in order that he may exercise due caution and at the same time use good judgment when considering the application of a worthy client?

Generally speaking, it is necessary that the applicant produce facts and figures which will conclusively show:

1—That his business has sufficient capital for real capital purposes.

2—That the concern is making real progress.

3—That income exceeds outgo.

4—And last but not least, that conditions warrant his belief that future profits will take care of the requested loan when due.

Experience has taught the banker that the safest and most accurate information regarding a proposed credit extension is to be found in the report of examination of an independent and reliable accountant.

Some Observations

Regarding the usual balance sheet and supporting facts of an accountant's report, I am going to offer these observations.

It has been my experience that many reports go into great detail regarding certain items on the balance sheet while they slide over other items which to the banker are items of real moment.

For example, most reports go into great detail in explaining the profit and loss account, but they fail to be explicit and thorough in their description of items making up bills receivable and merchandise inventory. To my mind these two are two of the most important items on the balance sheet. The report should always show in detail what portion of bills receivable is represented by current bills, for merchandise sold customers, not yet due, and what portion represents renewals, past due or disputed claims, and overdrawn accounts of officers. Also, whether or not any portion has been pledged as security for indebtedness, and if so, whether this is a regular practice.

The item, merchandise inventory, should be explained, particularly in reference to the method pursued in arriving at book value, whether it represents cost or market, and if cost, whether this includes selling and administrative costs or merely manufacturing cost. This item should be further explained in reference to the character of goods. The actual amount carried over and the possibilities and practices regarding turn-over.

Unusual Items

In the same manner any unusual items, such as deposits of officers, relatives and friends, should be gone into thoroughly, for the purpose of showing whether or not such deposits are temporary and subject to demand withdrawal, or whether they are of a permanent nature, as knowledge of this character has an important bearing upon the condition of the company.

There is just one other point which I wish to stress in this connection and that is that accountants in many cases, fail to appreciate the importance of setting up real facts regarding the record and experience of the personnel of the organization. I recognize that naturally there are certain limitations beyond which the accountant cannot go in this respect, but on the other hand it is quite possible to paint a natural and feasible picture of the executives in a manner which would be helpful to the banker.

All of this information when properly digested should form a picture of the true condition of the concern up to the date of the report.

Future Commercial Conditions

But there is, it seems to me, another step of great importance which has not as yet been covered. We agreed that credit making was based upon future commercial conditions, and that is where the real importance of budgetary control comes in.

A well conceived budget should forecast with great accuracy the results which are to be expected in the future, so far as the earnings and expenses of the particular institution are concerned.

The budget when functioning properly prevents over-expansion and the piling up of inventories beyond the demands of the business. It furnishes the executives with definite plans whereby actual performance can be checked against future estimates. It acts as a barometer and provides set danger signals which warn against what is going to happen if certain policies are pursued.

The budget plan of operation when properly executed takes due care of the two most important items of finance, namely, Income and Expense, and quickly determines with real accuracy whether the concern is going backward or forward.

The budget being founded upon accurate records of pas performances makes it possible to forecast future progress and that is the knowledge which the banker must have if he is to intelligently pass judgment upon credits which are to be used for future operations.

Budget preparation and use is a modern development of accountancy, the value of which is not as yet clearly understood or fully appreciated by the present day business men. History will show that from the time of Adam down to today the human race has been, and is, prone to accept anything new. Budgetary control to a certain extent is new; therefore, we must wait patiently for its adoption by progressive executives who have the vision to appreciate its real worth.

Be Frank With Bankers

To sum up, I would leave this thought with you gentlemen. Teach your clients to be frank and honest with their bankers. Show them how important it is that they furnish their bankers not only with facts and figures representing the present condition and past history of their companies, but also the importance from a credit standpoint, of adopting budget systems which will forecast with real accuracy the future conditions which they must meet. The more assistance they give their bankers the greater the cooperation which their bankers will give them. I am a firm believer in budgetary control as a future necessity for the business man who expects credit accommodation.

To Reopen National Paper Mill

Ballston Spa, N. Y., February 4, 1929.—Word was received this week by the local Chamber of Commerce that the National Mill, which has been closed for several years, is to be reopened and operated as a specialty paper mill. It has been purchased by the American Industrial Company which operates extensive mills in other places. In announcing the purchase F. B. Oldham, president of the American Industrial Company, stated that the firm would use the plant for the manufacture of a high grade paper rope and insulated paper. The old paper mill has been idle several years although it has one of the best water power sites on Kaydeross Creek. As there are no boilers in the mill and other improvements will be necessary it will probably be the middle of March or the last of April before operations will be started. It is understood that the mill will employ about 75 persons at the start.

Allied Paper Mills Elects Officers

Kalamazoo, Mich., February 4, 1929.—Allied Paper Mills held its annual meeting January 23. There were no changes in either officers or directors, the list following: Directors: Mrs. Florence G. Anderson, Otsego; A. L. Pratt, Paris, France; George D. Cobb, A. B. Connable, G. S. Davis, J. H. Dewing, A. E. Kettle, W. E. Kidder, S. B. Monroe, Frank Mosteller, J. A. Pyl, E. G. Read, G. W. Ritchie, Alex G. Gilman, and H. L. Vander Horst, Kalamazoo. President and general sales manager, Alex G. Gilman; vice president and general manager, Frank Mosteller; vice president, John A. Pyl; secretary, G. S. Davis; treasurer, S. B. Monroe.

The Budget as a Business Compass*

By John F. Putnam[1]

There is probably no subject receiving as much attention in all branches of modern business life as the budget. The reason for this, is, of course, obvious. The world has just passed through a cataclysm affecting every scale of life and every line of human endeavor with the result that it has become necessary for all persons or groups of persons to plan as to how they are going to meet their future needs if they are to survive in their struggle for existence. The enormous expenditures caused by the war have compelled governments to make strenuous efforts to place themselves in positions to meet expenses with available revenues so as not to cripple their citizenry. The most efficient instrument which has been developed thus far to aid in such a situation is the budget.

How Did Budgeting Arise?

Two questions may be asked—How did budgeting arise and what is budgeting? Budgeting was first devised by governmental organizations as a formal method of controlling governmnetal expenditures. The derivation of the word is very interesting. It comes from a French word meaning a "bag." No doubt this word was coined by the English because the Chancellor of the Exchequer of the English Cabinet who was responsible for proposing the financial program, appeared before Parliament with all of his papers in a bag or pack. As to what budgeting is, we will let one of the authorities on budgets and budget making in this country, Henry Bruere, vice president of the Metropolitan Life Insurance Company of New York City, tell us. Mr. Bruere, at a recent meeting of the American Management Association, had this to say about budgeting.

What Is Budgeting?

"What is budgeting? Is it control over expenditures? It is partly that, but control over expenditures can be had without budgeting. What is budgeting? Is it forecasting operations and revenues and planning production, credit and sales programs accordingly? These are involved in budgeting, but forecasts and planning are only the preliminary to budgeting. What is budgeting? Is it recognizing the need for economy and forethought in advance of actual performance? That is a part of budgeting. But every business man since Benjamin Franklin has, to a greater or less degree, followed those principles in the management of his business.

"Budgeting is more than all these things. Budgeting is a method for combining the coordinated intelligence of an entire organization into a plan of action based upon records of past performance and governed by a rational judgment of factors that will influence the course of the business in the future. It is not control merely. It is not forecasting merely. It is an exacting and rigorous analysis of the past and the probable and desired future expenditures with a view to substituting considered intention for opportunism in management.

"If this definition does not seem inclusive, I can only say that the budget has this great advantage. It is neither creed, canon or system. It is not a cult and it has no prophets. For any institution or man, budgeting is what you care to make it, provided only that you are a realist and are willing to undergo the pain of thinking conclusively regarding your business in terms of obtainable results instead of hopeful expectations.

What Is the Scope of Budgeting

"What is the scope of budgeting? Obviously, it applies to capital expenditures. It applies to sales. It is a necessary element of any sort of intelligent purchasing, though unfortunately it is often disregarded in buying materials and supplies. The budget is involved in every manufacturing or mining project. It is expedient to budget personnel and labor requirements. It is the means of judicious financial administration. Every good business uses it, consciously or otherwise. The only part of the business organism to which the budget cannot apply is to the intelligence of business. One cannot or should not think all the year's supply of ideas and plans at the time the budget is prepared."

It will be noted that this definition of Mr. Bruere's covers budgeting in its widest sense, stressing the point that budgeting is an assembling of all the facts about a given problem in such a way as to enable the management to determine upon a program to do something which may be measured in terms of work done or in cost of doing a specified amount of work. In any event, the budget program sets up a standard of measurement by which actual performance can be measured.

Developed in Governmental Organizations

As stated above, budgets were first formally developed in governmental organizations. The need for the budget in these organizations arose from the fact that taxation burdens had become irksome and consequently it was necessary to control expenses in advance if taxes were to be kept down to a minimum. In their crudest forms, governmental budgets were amounts of money set aside by appropriating bodies for specific purposes. Our national government up to very recent years, operated under this form of budgets. Such budgets, to be sure, were very crude methods of control and as governmental organizations grew more and more complex and governmental functions became more widely spread, the controls necessarily grew looser, expenses mounted and the tax burden became so oppressive that the cost of government became a subject of much concern on the part of the average citizen. Curiously enough, those governmental organizations which were closest to the people, first adopted a budget system as a method for curbing expenditures to appease the unrest of the tax payer. Thus it was that municipalities adopted budget systems before states and the national government in this country. General government taxation problems in foreign countries had long been matters of concern with the result that foreign governments generally adopted the budget system before our own. It was the world war which precipitated a situation which compelled our own government to adopt measures to conserve its expenditures, thereby resulting in a budget system.

Main Purpose of Governmental Budgets

The main purpose of governmental budgets is to control the expenditures of funds apportioned for special purposes or departments. Inasmuch as there is no element of profit concerned in governmental operations, the necessity for controlling the volume of work done by governmental departments has not been stressed, thereby resulting in a failure on the part of public officials to adopt a work program or production budget plan. There are isolated instances where governmental organizations have developed work program budgets for some of their departments. The city manager form of municipal government is now working along the lines of developing work program budgets for the guidance of their departments. Such budgets will result in greater economies for the average citizen.

Private business has gone through the same development in budget making as public. The management of each business unconsciously budgets the operations of its business when it estimates what things are going to cost. Mr. McKinsey in his excellent book, "Budgetary Control," tells of an experience he had visiting the merchandise manager of a large retail store several years ago. This executive derided the idea of preparing a sales estimate, stating that this was an academic question which he did not care to discuss. Mr. McKinsey inquired if he permitted his buyers to use their own judgment in deciding on quantities of goods to be purchased. The merchandise manager replied that buyers could not be permitted to buy what they desired for the

* National Association of Cost Accountants Bulletin.
[1] Compt., Holeproof Hosiery Co., Milwaukee, Wis.

reason that they would bankrupt the firm in six months. Mr. McKinsey then inquired how buyer's purchases were controlled and was informed that the executives of the firm first obtained the average sales for the past three years and added to this the percentage of increase they expect the next year, and with this as a basis determined the purchases necessary to meet those plans. This was the amount which the buyers were permitted to purchase. After some few minutes further discussion with the merchandise manager, Mr. McKinsey had proven that this department store was already operating on a budget system. This instance is cited merely to show that those businesses which have attained any degree of success have been consciously or unconsciously operating on some sort of a budget plan.

The Past Experience of Business

The general method for developing a budget is to take the past experience of the business over a definite period of time and with that as a basis, determine what the average experience, operating under exactly similar conditions, would be and decide upon what percentage of increase or decrease might be expected in the coming year depending upon economic conditions. These percentages applied to the operating statement of the current year, form the basis for the budget for the coming year. This budget to be complete must cover the entire field of the business. The logical point from which to start is the forecast of the operating statement for the coming year, thereby determining what the profits should be if the operations as forecasted are followed out. This necessitates, in the case of a trading corporation, the determining of the volume of sales for the coming year, basing this estimate upon past experience and the estimated increase or decrease, depending upon probable economic conditions in the coming year. After making the estimate of sales, it is necessary to determine the cost of the goods sold. Here again, it will be necessary to take into consideration the past experience and probable trend of the market if goods are to be purchased direct for sale, or the trend of the material market for goods that are to be manufactured for sale. It will also be necessary to forecast the shipping, selling and administrative expenses to carry out such a sales program. Here again recourse will be had to past experience. Changes in salary costs and cost of supplies will need to be reflected in the estimated costs for the future period. The basic part of the budget is now completed and ready for adoption, but before final adoption, it will be necessary for the management to agree upon a production program, in the case of manufacturing corporations, which will result in the goods being produced in quantities and kinds necessary to carry out the sales program. The adoption of such program will necessitate sub-dividing all manufacturing costs into the labor, material and overhead charges necessary to carry out the production program.

Purchasing Program

The production program, in turn, calls for the adoption of a purchasing program which may be sub-divided into materials, operating supplies and equipment requirements. The purchasing department will need to see that materials in the proper quantities and kinds are available at the proper time to carry out the manufacturing program. The purchasing department must also see that the necessary additional equipment is installed to carry out the production program. It must also see that operating supplies are available to keep the equipment at a maximum efficiency.

After these budgets are prepared, the treasurer of the company is in a position to prepare a financial program which will guarantee that funds will be available in the amounts needed and at the time needed to carry out the program adopted by the management. This involves taking into consideration first the sources of the funds and the amounts available from each source. If it is found that current funds are not available in sufficiently large quantities, it will be possible to survey sources from which funds may be borrowed to supply the deficiency. All of these matters can be definitely planned in advance so that the entire machinery of the business will run smoothly. After these separate programs have been adopted, it will be possible then for the management to have an estimated balance sheet prepared which should reflect quite accurately the condition of the business at any particular time during the budgetary period under consideration.

Machinery Required To Work Plan

No discussion of budgets would be complete unless some attention is paid to the machinery required to work the plan. In small organizations, the active heads or owners will no doubt work up the budget. In larger businesses, there will be some official or executive who will be designated as the budget executive to draw up the budget which will be submitted to the management for adoption. There are two widely separated methods of making up the budget estimates. Under the one these estimates are made up and imposed on the subordinate executives; under the other, the subordinate executives prepare the estimates and submit them to the management for their consideration. Which one of these plans is the better is a moot question although the psychology of modern management leans to the latter.

The budget, if it is to fulfill its purpose, must be accompanied by a system of current reports comparing actual experience with budget estimates. This necessitates up-to-the-minute records showing actual costs and actual production figures available soon after the expiration of any budgetary period in order that any marked variations from estimates may be immediately corrected. Here again this compels those who are responsible for these reports to adopt a time schedule for making reports. Such a practice always results in increased efficiency in getting out reports through closer supervision of work.

Invaluable Aid to Management

In conclusion from a number of years' experience both with public and private budget making, we can testify there is no better instrument thus far devised to aid management, whether public or private, to steer its course through the many shoals and quicksands of the industrial sea. It will unerringly point out the true course to sail; it will call attention to the calms which mean inaction and to the stormy seas which may threaten to engulf the business ship and hurl it upon the rocks. That mariner who puts his trust in this business compass will be the one who will most certainly bring his craft into the calm haven.

Output of Electrical Energy Nearly Doubled

The production of electric energy in 1928 by the International Paper and Power Company system was 3,504,131,000 kilowatt hours, practically double the output of the system for the previous year, 1927. For the month of December, 1928, output of the International Paper and Power Company was 355,978,000 kilowatt hours, an increase of 53 per cent over the production of the system in December, 1927.

Included in the output figures are those of New England Power Association, of Canadian Hydro-Electric Corporation, Limited,—controlling Gatineau Power Company and Saint John River Power Company—of the Deer Lake, Newfoundland, plant of International Power and Paper Company of Newfoundland, Limited, and of the hydro-electric plants of the International Paper Company group.

At the close of 1928 the International Paper and Power system included hydro-electric plants in the United States, Canada, Newfoundland, of an aggregate capacity of 1,217,600 horsepower developed and under construction. Of this, 562,600 horsepower was in Gatineau Power Company in its plants on the Ottawa River and tributaries, and 414,500 horsepower was in New England Power Association.

In addition to the above, the International Paper Company had hydro-mechanical power plants of 110,000 horsepower, and New England Power Association had 382,000 installed horsepower of central station steam plants.

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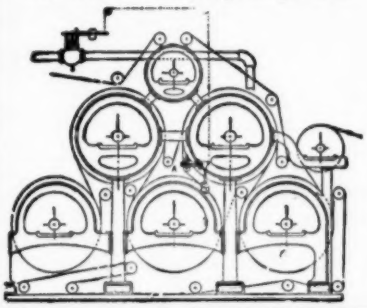

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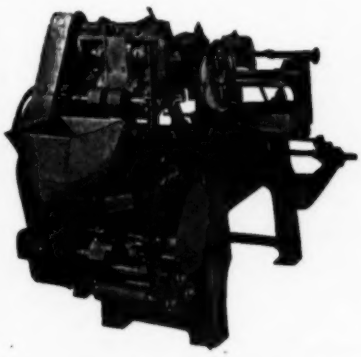

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PROVIDENCE, R. I.

Obituary

Col. William Henry Sullivan

BOGALUSA, La., February 4, 1929.—Col. William Henry Sullivan, executive vice president of the Bogalusa Paper Company, died on January 26. He had been in failing health since the death of his wife on December 9, which undoubtedly hastened his death.

Col. Sullivan was born August 9, 1864, at St. Catherines, Ontario. His life story is inspiring from beginning to end. His is the role of one who came, who saw, who accomplished.

He exemplified the very spirit of Bogalusa, for he was such a major portion of it. When Bogalusa was incorporated in 1914 he was appointed mayor and he held that office with efficiency and distinction until his death. His successive elections found no candidates in the field of opposition. He performed in that capacity so superbly until it would have been hard to have found another so capable and fitted for a municipality's first executive. This despite his herculean responsibilities as head of a great lumber, paper and numerous other concerns.

Colonel Sullivan served his community in divers forms of usefulness. Besides his arduous duties with the Great Southern Lumber Company and holding the reins of city as mayor, he was also president of the Chamber of Commerce, president of the Washington Parish Fair Association, president of the local Building and Loan Association, president of Bogalusa Stores Company, formerly president of the Y. M. C. A., the First State Bank and Trust Company, and Bogalusa Paper Company. He was an active member of the state committee on flood control and declined the presidency of the state chamber of commerce body on account of heavy pressure brought about by business and social obligations.

In American industry, Colonel Sullivan was an outstanding figure and outside he was the same. His broad, forward-looking policy brought him not only state but national prominence as well.

His achievement in reforestation in this state will be inscribed as an event of natural history. It was he who established the nursery plan of reforestation in Louisiana and besides leading it in every step the state has taken in that direction, assumed a high place in the national council of forestry. Louisiana has taken second place among the southern states in fire prevention work through his efforts mainly.

Colonel Sullivan lived to see the California redwood program—a movement of which he had been a factor in planning—set in motion. The first lumber was manufactured in Bogalusa January 13—an epochal event in the history of the city, state and section. One of the greatest undertakings since the establishment of the city, the manufacture of redwood represents an investment of more than a million dollars. Some plan had to be adopted by the Great Southern Lumber Company if the lumber business was to be perpetuated in Bogalusa and vicinity. Men of Colonel Sullivan's vision were necessary to devise such a program.

Gustav A. Bisler

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., February 4, 1929.—Gustav A. Bisler, who had long been linked with the paper board manufacturing and box making industry of Philadelphia, as head of the G. A. Bisler Company, Inc., Fifth and Brown streets, died at his home, 6390 Drexel Road, last Sunday, from heart complications. He was 77 years of age and had been engaged in the paper manufacturing and box making trade for 57 years.

He was at the time of his passing head of the G. A. Bisler Company, one of the largest paper box concerns in this section of the country. He was among the original members that organized the former Philadelphia Paper Manufacturing Company, with mills in Manayunk, which recently was merged with the American Container Corporation, and which continued to carry on the board and container business he helped to found.

He was a member of the Union League, the Art Club, the Manufacturers' Club and other civic and charitable organizations. Throughout his life an interest in church work was maintained. For forty-three years he was a member of West Hope Presbyterian Church.

Surviving him are a son, Gustav A. Bisler, Jr., also engaged in the paper box industry at 12th and Brown streets, and three daughters, Mrs. George P. Orr, of Berwyn; Mrs. Norman L. Jameson, of Merion, and Mrs. Edward F. Corson, of Cynwyd.

James P. Munroe

BOSTON, Mass., February 2, 1929.—James Phinney Munroe, manufacturer and president of the Twentieth Century Club, died today at the Hotel Charlesgate of influenza. Mr. Monroe was born in Lexington, June 3, 1862. He entered the Massachusetts Institute of Technology and received his B.S. degree in 1888. From 1882 to 1889 he was secretary of the Institute faculty and after 1889 he was a member of the firm of James S. Munroe & Co.

Another of Mr. Munroe's business interests was the Munroe Felt and Paper Company, of which he was treasurer for a time and later president. He had been president of the Alumni Association of the Institute from 1884 to 1897, was a life member of the corporation of the Institute, and had been its secretary from 1909.

From 1899 to 1908 he was managing editor of "The Technology Review." He also had been a member of the National Society of Vocational Education, of which he was president in 1910 and 1911, and was vice-chairman of the Federal Board of Vocational Education from 1917 to 1921.

Franklin H. Kalbfleisch

Franklin H. Kalbfleisch died at his home in Babylon, Long Island, on January 30. He was born in Brooklyn, N. Y., on March 3, 1846, and spent his lifetime in the chemical business. Mr. Kalbfleisch was a son of Martin Kalbfleisch, who came to this country from Holland (his birthplace) in 1829 and established the chemical business which Franklin H. Kalbfleisch entered in 1870.

During his lifetime Mr. Kalbfleisch organized many companies in various branches of chemical manufacture and later these were consolidated into the Kalbfleisch Corporation, of which he was the head until 1920 when, due to ill health, he retired from active participation in the business. Mr. Kalbfleisch was a man of resolute personality but of kindly and generous disposition and enjoyed the respect of all who knew him.

He leaves two daughters, Mrs. Maud Kalbfleisch and Miss Augusta S. Kalbfleisch.

Mrs. H. D. Waterbury

[FROM OUR REGULAR CORRESPONDENT]

SKANEATELES, N. Y., February 4, 1929.—Mrs. H. D. Waterbury, vice president and treasurer of the Waterbury Felt Company, manufacturers of papermakers' felts, died during the past week at her home in this place, following an attack of heart disease. In recent years she had traveled extensively in an attempt to regain her health and her death was a decided shock to her many friends in the Northern New York industry. She was the widow of Henry T. Waterbury, founder of the business, and upon his death took over his holdings in the firm. At the time of her death she was also a director and a large stockholder in the felt company. A son, Robert H. Waterbury, also identified with the firm, is one of the survivors.

August C. Ballentine

August C. Ballentine, for twenty years associated with the Eastwood Wire Interests of Belleville, N. J., and for a great many years its secretary, died suddenly on Saturday, January 26, at his home in Belleville, N. J.

Up to the time of his death Mr. Ballentine apparently enjoyed the best of health and was at his office on Saturday morning. His death was attributed to heart disease.

He was sixty-two years old and at the time of his death was a member of Belleville Lodge F. & A. M. No. 108.

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NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING FEBRUARY 2, 1929

SUMMARY

Cigarette paper	312 cs.
Wall paper	104 bls., 22 cs.
Paper hangings	18 bls., 8 cs.
News print	5942 rolls
Printing paper	87 cs.
Wrapping paper	5 bdls., 126 cs.
Packing paper	2 cs.
Filter paper	5 cs.
Gold coated paper	15 cs.
Surface coated paper	73 cs.
Baryta coated paper	83 cs.
Coated paper	25 cs.
Photo paper	58 cs.
Decalcomania paper	12 cs.
Colored paper	70 cs.
Transfer paper	1 cs.
Parchment paper	20 bls., 6 cs.
Tissue paper	40 cs.
Painted paper	13 cs.
Silk paper	26 cs.
Stencil paper and ink	68 cs.
Straw boards	574 rolls
Miscellaneous paper	205 cs.

CIGARETTE PAPER

British American Tobacco Co., Aquitania, Southampton, 67 cs.

Standard Products Corp., Ile de France, Havre, 80 cs.

Max Spiegel & Son, Roussillon, Bordeaux, 11 cs.

American Tobacco Co., Roussillon, Bordeaux, 200 cs.

Liggett & Myers Tobacco Co., Roussillon, Bordeaux, 14 cs.

WALL PAPER

F. A. Binder, America, Bremen, 15 bls.

Globe Shipping Co., New York, Hamburg, 9 bls.

J. E. Bernard & Co., New York, Hamburg, 7 bls.

R. F. Downing & Co., Minnetonka, London, 14 bls., 13 cs.

F. J. Emmerich, Andania, Liverpool, 48 bls., 3 cs.

W. H. S. Lloyd & Co., American Banker, London, 6 bls.

J. E. Bernard & Co., Rotterdam, Rotterdam, 5 bls., 6 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Minnetonka, London, 13 bls., 2 cs.

A. C. Dodman, Jr., Inc., Cedric, Liverpool, 5 bls.

Whiting & Patterson Co., Inc., Aquitania, Southampton, 2 cs.

F. J. Emmerich, Ile de France, Havre, 2 cs.

NEWS PRINT

Parsons & Whittemore, Inc., Stuttgart, Bremen, 235 rolls.

Perkins Goodwin & Co., New York, Hamburg, 202 rolls.

Bank of Montreal, Humberarm, Cornerbrook, 5,505 rolls.

PRINTING PAPER

Martin & Bechtold, Columbus, Bremen, 13 cs.

P. C. Zuhlke, Lapland, Antwerp, 12 cs.

Walker Goulard Plehn Co., Stuttgart, Bremen, 26 cs.

F. L. Kramer & Co., American Banker, London, 4 cs.

P. C. Zuhlke, Maine, Antwerp, 3 cs.

E. Dietzgen & Co., Rotterdam, Rotterdam, 29 cs.

WRAPPING PAPER

Birn & Wachenheim, Lapland, Antwerp, 96 cs.

F. C. Strype, Lapland, Antwerp, 5 cs.

Birn & Wachenheim, Philadelphian, Antwerp, 20 cs.

Furness Withy & Co., Humberarm, Cornerbrook, 5 bdls.

E. Dietzgen & Co., Rotterdam, Rotterdam, 5 cs.

PACKING PAPER

Steiner Paper Corp., New York, Hamburg, 2 cs.

FILTER PAPER

A. Giese & Son, New York, Hamburg, 4 cs.

H. Reeve Angel & Co., Inc., Minnetonka, London, 1 cs.

GOLD COATED PAPER

F. Murray Hill, Columbus, Bremen, 7 cs.

F. Murray Hill, Stuttgart, Bremen, 8 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Lapland, Antwerp, 53 cs.

Gevaert Co. of America, Philadelphian, Antwerp, 44 cs.

P. C. Zuhlke, Maine, Antwerp, 16 cs.

BARYTA COATED PAPER

J. H. Schroeder Banking Corp., Stuttgart, Bremen, 40 cs.

Globe Shipping Co., Stuttgart, Bremen, 43 cs.

COATED PAPER

Gevaert Co. of America, Maine, Antwerp, 25 cs.

PHOTO PAPER

Gevaert Co. of America, Philadelphian, Antwerp, 58 cs.

DECALCOMANIA PAPER

C. W. Sellers, New York, Hamburg, 12 cs.

COLORED PAPER

Borden Riley Paper Co., Philadelphian, Antwerp, 3 cs.

S. Gilbert, Stuttgart, Bremen, 51 cs.

Universal Car Loading Co., Stuttgart, Bremen, 16 cs.

TRANSFER PAPER

F. L. Kramer & Co., Stuttgart, Bremen, 1 cs.

PARCHMENT PAPER

Walker Goulard Plehn Co., New York, Hamburg, 20 bls.

S. Bienfang, Rotterdam, Rotterdam, 6 cs.

TISSUE PAPER

P. Lorillard & Co., Andania, Liverpool, 40 cs.

PAINTED PAPER

R. F. Downing & Co., Ile de France, Havre, 13 cs.

SILK PAPER

Meadows Wye & Co., Rotterdam, Rotterdam, 26 cs.

STENCIL PAPER AND INK

Arlac Dry Stencil Co., New York, Hamburg, 68 cs.

STRAW BOARDS

Grand Corrugated Paper Co., Rotterdam, Rotterdam, 200 rolls.

Perkins Goodwin & Co., Rotterdam, Rotterdam, 200 rolls.

A. Vuyk, Rotterdam, Rotterdam, 174 rolls.

MISCELLANEOUS PAPER

C. Steiner, N. Amsterdam, Rotterdam, 7 cs.

E. Dietzgen & Co., N. Amsterdam, Rotterdam, 37 cs.

Keuffel & Esser Co., N. Amsterdam, Rotterdam, 11 cs.

International F'd'g Co., N. Amsterdam, Rotterdam, 38 cs.

Fuchs & Lang Manfg. Co., Columbus, Bremen, 2 cs.

Stern Bros., Ile de France, Havre, 8 cs.

Globe Shipping Co., Ile de France, Havre, 4 cs.

A. Flinn, Ile de France, Havre, 3 cs.

Coenca Morrison Co., Ile de France, Havre, 8 cs.

Keller Dorian Paper Co., Ile de France, Havre, 34 cs.

Globe Shipping Co., Rotterdam, Rotterdam, 53 cs.

RAGS, BAGGINGS, ETC.

American Woolstock Corp., N. Amsterdam, Rotterdam, 23 bls. rags.

The Barrett Co., N. Amsterdam, Rotterdam, 41 bls. rags.

A. W. Fenton, Inc., Sud Atlantico, Havana, 56 bls. rags.

Amtorg Trading Co., Hellig Olav, Copenhagen, 89 bls. rags.

Chase National Bank, New York, Hamburg, 2,890 bls. rags.

Chase National Bank, Amasis, Hamburg, 266 bls. rags; 108 bls. flax waste.

Brown Bros. & Co., Minnetonka, London, 30 bls. rags.

State Bank & Trust Co., Andania, Liverpool, 30 bls. rags.

J. Cohen Son Co., Inc., Andania, Liverpool, 38 bls. rags.

Amsinck Sonne & Co., Inc., Andania, Liverpool, 83 bls. flax waste.

Bank of The Manhattan Co., City of Cambridge, Antwerp, 108 bls. rags.

E. Butterworth & Co., Inc., City of Cambridge, Antwerp, 10 bls. rags.

Robert Blank, City of Cambridge, Antwerp, 17 bls. rags.

Stone, Inc., City of Cambridge, Antwerp, 7 bls. rags.

Van Oppen & Co., City of Cambridge, Antwerp, 43 bls. rags.

Standard Bank of South Africa, City of Cambridge, Antwerp, 512 bls. cotton waste.

Royal Manfg. Co., City of Cambridge, 37 bls. cotton waste.

S. H. Waldstein, City of Cambridge, Antwerp, 100 bls. cotton waste.

Leigh Textile Co., City of Cambridge, Antwerp, 83 bls. cotton waste.

Darmstadt Scott & Courtney, City of Cambridge, 34 bls. rags.

Castle & Overton, Inc., City of Cambridge, Antwerp, 50 bls. rags.

Whaling Waste Products Corp., City of Cambridge, 28 bls. cotton waste.

Katzenstein & Keene, Inc., City of Cambridge, Antwerp, 535 bls. bagging; 60 bls. rags.

E. J. Keller Co., Inc., City of Cambridge, ——, 49 bls. rags.

B. D. Kaplan, Innoko, Antwerp, 2 bls. rags.

State St. Trust Co., Innoko, Antwerp, 119 bls. flax waste.

Manufacturers Trust Co., Innoko, Antwerp, 68 bls. flax waste.

E. J. Keller Co., Inc., Ohio Maru, ——, 84 bls. rags; 94 bls. bagging.

OLD ROPE

International Purchasing Co., Executive, Genoa, 190 coils.

R. Canovai & Figli, Executive, Leghorn, 94 coils.

Brown Bros. & Co., Hellig Olav, Oslo, 31 coils.

Brown Bros. & Co., Caucasier, Antwerp, 67 coils.

Brown Bros. & Co., Maine, Antwerp, 79 coils.

W. Schall & Co., Roussillon, Bordeaux, 88 coils.

W. Steck & Co., Rotterdam, Rotterdam, 51 coils.

Brown Bros. & Co., Lapland, Antwerp, 73 coils.

Brown Bros. & Co., Cabo Villano, Huelva, 131 coils, 25 bls.

CASEIN

Champion Coated Paper Co., Sud Atlantico, B. Ayres, 1,215 bags, 57,452 ks.

Casein Manfg. Co., Sud Atlantico, B. Ayres, 300 bags, 15,375 ks.

T. M. Duche & Sons, Sud Atlantico, B. Ayres, 2,501 bags, 150,120 ks.

Crawford Keen & Co., Sud Atlantico, B. Ayres, 417 bags, 24,993 ks.

American British Chemical Supplies Co., Sud Atlantico, B. Ayres, 417 bags, 25,020 ks.

D. C. Andrews & Co., New York, Hamburg, 155 bags.

Atterbury Bros., Inc., Western World, B. Ayres, 1,250 bags.

Kalbfleisch Corp., Western World, B. Ayres, 1,751 bags.

Champion Coated Paper Co., Western World, B. Ayres, 1,124 bags.

A. Hurst & Co., Ile de France, Havre, 66 bags.

WOOD PULP

Bulkley Dunton & Co., Kelkheim, ——, 1,050 bls. wood pulp, 210 tons.

Chemical National Bank, Kelkheim, Iggesund, 650 bls. sulphate, 130 tons.

M. Gottesman & Co., Inc., Kelkheim, Iggesund, 500 bls. sulphate, 100 tons.

Bulkley Dunton & Co., America, ——, 2,500 bls. wood pulp, 518 tons.

Lagerloef Trading Co., America, Bremen, 175 bls. wood pulp, 25 tons.

Atterbury Bros., Inc., Hellig Olav, Oslo, 750 bls. wood pulp.

E. M. Sergeant & Co., Hellig Olav, Oslo, 160 bls. wood pulp.

E. J. Keller Co., Inc., Hellig Olav, ——, 400 bls. wood pulp.

J. Andersen & Co., Stuttgart, Bremen, 1,000 bls. wood pulp.

Castle & Overton, Inc., Amasis, Hamburg, 1,482 bls. wood pulp, 202 tons.

Bulkley Dunton & Co., Amasis, ——, 1,125 bls. wood pulp, 228 tons.

Agasote Millboard Co. (Trenton), Humberarm, Cornerbrook, 267 bls. wood pulp.

J. Andersen & Co., Minnequa, Sarpsborg, 1,080 bls. wood pulp, 180 tons.

NORFOLK IMPORTS

WEEK ENDING FEBRUARY 2, 1929

Darmstadt Scott & Courtney, Innoko, Antwerp, 126 bls. bagging.

New York Trust Co., Innoko, Antwerp, 247 bls. bagging.

British American Tobacco Co., Jnnoko, Antwerp, 49 cs. printed cigarette paper.

British American Tobacco Co., Innoko, Antwerp, 47 rolls wrapping paper.

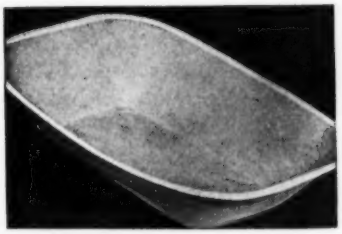
NEW ORLEANS IMPORTS

WEEK ENDING FEBRUARY 2, 1929

E. J. Keller Co., Inc., Missouri, ——, 413 bls. flax waste.

(Continued on page 72)

Get your share



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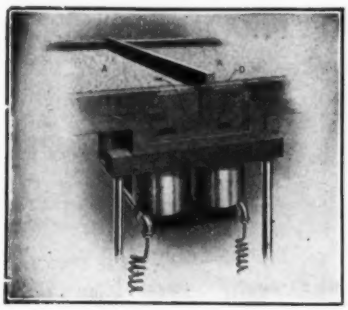

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Ferguson ENGINEERS

Imports of Paper and Paper Stock

(*Continued from page 70*)

HOUSTON IMPORTS

WEEK ENDING FEBRUARY 2, 1929

Bank of Montreal, Humberarm, Cornerbrook, 8,216 rolls news print.

PHILADELPHIA IMPORTS

WEEK ENDING FEBRUARY 2, 1929

The Lang Co., Executive, Leghorn, 114 bls. rags.
Equitable Trust Co., Executive, Leghorn, 250 bls. rags.
J. Andersen & Co., Minnequa, Sarpsborg, 150 bls. wood pulp, 25 tons.
Fidelity Trust Co., Cabo Villano, Bilbao, 43 bls. rags.
E. J. Keller Co., Inc., Estrella, ——, 279 bls. rags.
E. J. Keller Co., Inc., Tomalva, ——, 62 bls. bagging.
E. J. Keller Co., Inc., Blommersdyk,——, 840 bls. rags.
E. J. Keller Co., Inc., West Harcuvar, ——, 79 bls. rags.
E. J. Keller Co., Inc., West Harcuvar, ——, 55 bls. new rags.
E. J. Keller Co., Inc., West Harcuvar, 325 bls. wood pulp.
Castle & Overton, Inc., Maryland, Belgium, 111 bls. rags.
Castle & Overton, Inc., London Shipper, London, 189 bls. rags.
Castle & Overton, Inc., Westfalen, Germany, 82 bls. rags.
Castle & Overton, Inc., Cabo Santa Maria, Spain, 65 bls. rags.
Castle & Overton, Inc., Tomalva, Belgium, 308 bls. rags.

PORTLAND IMPORTS

WEEK ENDING FEBRUARY 2, 1929

Lagerloef Trading Co., City of Fairbury, Helsingfors, 2,097 bls. wood pulp, 349 tons.
Lagerloef Trading Co., Minnequa, Helsingfors, 8,170 bls. wood pulp, 1,092 tons.
M. Gottesman, & Co., Inc., Minnequa, Helsingfors, 1,200 bls. wood pulp, 203 tons.
Waterfalls Paper Mills Co., Minnequa, Gothenburg, 3,375 bls. wood pulp, 684 tons.
The Borregaard Co., Inc., Minnequa, Gothenburg, 625 bls. wood pulp, 126 tons.
The Borregaard Co., Inc., Minnequa, Hurum, 2,100 bls. sulphate, 350 tons.
The Borregaard Co., Inc., Minnequa, Herre, 1,500 bls. sulphate, 250 tons.

BALTIMORE IMPORTS

WEEK ENDING FEBRUARY 2, 1929

J. Andersen & Co., Minnequa, Sarpsborg, 540 bls. wood pulp, 90 tons.
Congoleum Nairn Co., Innoko, Antwerp, 101 bls. bagging, 1,086 bls. bagging.
Maryland Waste Co., Innoko, Antwerp, 5 bls. rags.
S. Shapira & Son, Innoko, Antwerp, 26 bls. rags.
W. H. Masson, Innoko, Antwerp, 59 coils old rope.
Castle & Overton, Inc., Ala, Germany, 205 bls. rags.
E. J. Keller Co., Inc., Harburg, ——, 325 bls. wood pulp.
E. J. Keller Co., Inc., Binnendyk, 1800 lbs. wood pulp.

BOSTON IMPORTS

WEEK ENDING FEBRUARY 2, 1929

Bulkley Dunton & Co., Kelkheim, ——, 3,225 bls. wood pulp, 465 tons.
American Exchange Irving Trust Co., Kelkheim, Hernosand, 6,780 bls. sulphite, 1,130 tons.
J. Andersen & Co., Minneque, Gothenburg, 500 bls. sulphite, 100 tons.
J. Anderson & Co., Minnequa, Gothenburg, 500 bls. wood pulp, 1,325 tons.
The Borregaard Co., Inc., Minnequa, Sarpsborg, 1,300 bls. wood pulp, 225 tons.
E. J. Keller Co., Inc., Blommersdyk,——,51 bls. rags.
E. J. Keller Co., Inc., Tsuyama Maru, ——, 400 bls. rags.
Castle & Overton, Inc., West Harcuvar, Germany, 60 bls. rags.
Castle & Overton, Inc., Blommersdyk, Holland, 105 bls. rags.

NEWPORT NEWS IMPORTS

WEEK ENDING FEBRUARY 2, 1929

M. Gottesman & Co., Inc., Kelkheim, Hudiksvall, 1,125 bls. sulphite, 225 tons.

Central-Topeka Paper Co. Sold

TOPEKA, Kans., February 4, 1929.—The sale of the Hodgins interests in the Central-Topeka Paper Company to the Kansas City Paper House of Kansas City, Mo., involving approximately $300,000 is one of the largest business deals negotiated in Topeka for some time. The new owners took over the business January 1.

There is to be no change in the operation of the company, it was announced, James Nelson, secretary and general manager, retaining his interest in the company and remaining as secretary and treasurer. The organization is to remain the same, and the name of the old company, the Central-Topeka Paper Company, will be retained.

The deal was negotiated by Charles H. Trapp, owner of the Trapp Print Shop.

Through the transaction, S. J. Hodgins, founder, president and treasurer and the principal stockholder has disposed of his entire interest in the paper company. He plans to continue to make his home in Topeka, having a number of other business interests here. The Central-Topeka Paper Company is the largest wholesale paper house in Kansas, and its annual business is about $1,000,000.

The Kansas City Paper House is one of the largest paper houses in Kansas City. Mr. Carpenter becomes president of the Topeka house, Mr. Thompson vice president and general manager.

Both Messrs. Carpenter and Thompson have been associated in the paper business for 25 years. Thompson especially is well known in the printing fraternity. For several years he was district salesman for the Kansas City Paper House in northeast Kansas and made his headquarters in Topeka.

The Central-Topeka Paper Company was organized 21 years ago by Messrs. Hodgins and Nelson, salesmen for the old Topeka Paper Company. Their assets were an empty room and plenty of nerve. The business now is housed in two large warehouses on lower Kansas avenue. The main office and warehouse at 221-23-25 Kansas avenue is in a three-story building, 5 feet by 150 deep. A second warehouse, across the street, 226-28 Kansas avenue, is in a two-story building, 50 feet by 100 feet deep.

The company has a force of 45 employees and does business in Kansas avenue is in a three-story building, 75 feet by 150 deep.

Kalamazoo Mills Increase Capital

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., February 4, 1929.—Two Kalamazoo paper concerns have during this week increased their authorized capital from $3,000,000 to $5,000,000 each. They are the Sutherland Paper Company and the Kalamazoo Vegetable Parchment Company. In addition the stockholders of the latter concern voted to sell 60,000 shares of common stock to the present stockholders at $10 a share or the par price. The funds thus derived are to pay for a small expansion, but chiefly to provide additional working capital.

The past year has been a most favorable one for both companies, according to reports given at the respective annual meetings. The outlook for 1929 is highly flattering.

L. W. Sutherland, president of the Sutherland Paper, reported that earnings for 1928 were in excess of $2 a share for the 250,000 shares outstanding as of December 31. K. V. P. earnings for 1928 were, according to Jacob Kindleberger, president, well above the $750,000 mark. Both concerns are regular dividend payers, Sutherland being on a 12 per cent basis and K. V. P. on a six per cent basis.

Sutherland Paper stockholders increased the board of directors from 13 to 14, but in the election for the ensuing year, left one place vacant for an added director at a future date. The annual election resulted as follows:

Sutherland Paper Company: Directors, L. W. Sutherland, F. W. Sutherland, James H. Dewing, B. C. Dickinson, F. B. Eilers, W. J. Lawrence, W. L. Otis, O. F. Miller, F. M. Hodge, E. W. Chase, Lewis C. Crockett, F. A. Appledoorn, Kalamazoo, and Jerome K. Keane, Detroit. President, L. W. Sutherland; vice president, O. F. Miller; secretary, F. W. Sutherland; treasurer, W. L. Otis.

Kalamazoo Vegetable Parchment Company: Directors, Jacob Kindleberger, C. H. Stearns, C. S. Campbell, A. B. Connable, W. O. Jones, W. E. Kidder, W. J. Lawrence, A. B. Read and Frank Mosteller; president, Jacob Kindleberger; vice presidents, C. H. Stearns, James M. Greenlee, of Chicago and Alfred Southon; general manager, R. A. Hayward; secretary, Thomas W. Peck; treasurer, C. S. Campbell.

The

ST. REGIS PAPER COMPANY

Daily Capacity
525 TONS

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Catalog and Directory Papers
Fibre Wrapping Papers
Packers Oiled Manila
Specialties

General Sales Office

15 Broad St., New York

Farmers' Bank Bldg.
Pittsburgh, Pa.

RHODES TANNATE WATERSHED BELTING

(ON SIX YEARS AND STILL GOOD)

On six years and "good for another year or two" is the report from a Wisconsin paper and pulp mill about a Rhoads Belt. Belts previously used on this "main drive of paper machine No. 1" lasted about two and a half years.

More than $10,000.00 worth of Tannate Belts have gone into the plants of this company during the past six years.

The longer life of Tannate Watershed makes it economical. Its stronger grip makes it profitable. And its dependability builds confidence with Tannate users.

Rhoads Tannate Watershed Belting is always sold under the Rhoads Service Guarantee. This leaves you to be the judge of whether your purchase is profitable. May we have your order on this basis.

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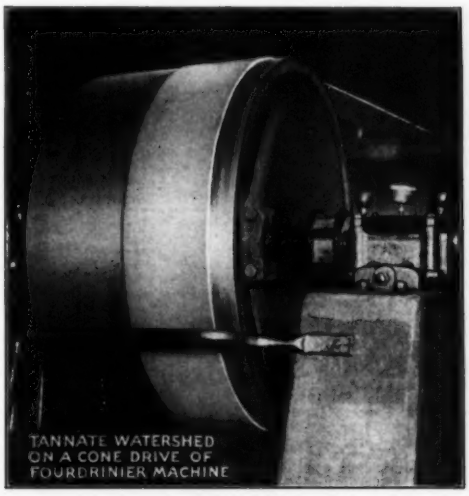
New York—104 Beekman St. Atlanta—70 Forsyth St., S. W.
Chicago—24 N. Clinton St. Cleveland—1224 W. Ninth St.

Factory and Tannery, Wilmington, Del.



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UPSON WORKS UNIONVILLE, CONN.

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Waterous, Limited
Brantford, Ont., Canada

R. J. MARX,
SOLE AGENTS FOR EUROPE
133-39 Finsbury Pavement, London, E. C.

Paper Mill Stocks and Bonds

Quoted by Taylor & White, 45 Wall street, New York City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	ASKED
Abitibi Power & Paper 5s, 1943	90	91
Abitibi Power & Paper 6s, serially to 1934	100	102
American Writing Paper 6s, 1947	81	87
Bastrop Pulp & Paper 6½s, 1940	103	105½
Bedford Pulp & Paper 6½s, 1942	97	100
Belgo-Canadian Paper 6s, 1943	100	103
British-Columbia Pulp & Paper 6s, 1950	89	92
Brown Paper Mills Serial 6s, 1941	97	100
Brown Company 5½s, 1946	98	101
Bryant Paper 6s, 1942	98	101½
Canadian Paper Board 7s, 19337	97	99½
Cape Breton Pulp & Paper 6s, 1932	103	...
Celotex Company 6s, 1929	95	99
Celotex Company 6½s, 1939	100	102
Celotex Company of Chicago, Debenture 6s, 1936	95	98
Central Paper Company Serial 6½s, 1942	86	89
Central Paper 7s, 1934	78	...
Champion Coated Paper Serial 6½s, 1934	100	...
Champion Coated Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 8s, 1930	95	...
Champion Paper Corp. 6s, 1945	95	98
Container Corp. of America Debenture 6s, 1936, ex-warrants	101	104
Continental Paper Products 6½s, 1943	90	99
Cornell Wood Products 7½s, 1937	103	...
Crown Willamette 6s, 1951	101	102
Delis Paper & Pulp Serial 6s, 1938	95	98
Dixon Board Mills Serial 6s, 1942	80	...
Donnaconna Paper 5½s, 1948	93	...
Eastern Manufacturing Co. 7s, 1938	97	100
Escanaba Paper Serial 6s, 1939	98	100
Escanaba Paper 6½s, 1935	96	99
Filer Fibre Serial 7s, 1935	90	95
Fort Irange Paper 7s, 1942	101	...
Fort William Paper 6s, 1946	100	104
Fraser Company 6s, 1950	103	105
Hammermill Paper Serial 6s, 1939	100	...
Hawley Pulp & Lumber 6s, 1946	96	...
Hawthorne Paper Company 6s, 1937	80	...
Hoberg Paper & Fibre 7s, 1937	94	97
Industrial Fibre Corp. Debenture 8s, 1933	100	...
Itasca Paper & Prairie River Power Serial 5½s, 1938	99½	...
Itasca Paper & Prairie River Power Serial 6s, 1938	99	...
Jessup & Moore First 6s, 1945	83	90
Kalamazoo Vegetable Parchment 6s, 1938	99	101
Lake Superior Paper 6s, 1941	105	108
Marathon Paper Mills Serial 5½s, 1942	99	101
Marinette & Menominee 7½s, 1936	103	105
Mead Pulp & Paper 5% Notes Serially, 1937	95	100
Mead Fibre 7s, 1937	97	101
Minnesota Ontario Paper Serial 6s, 1945	97½	100
Murray Bay Paper Serial 6½s, 1947	102	105
Munissing Paper Serial 6s, 1936	98	...
Nekoosa Edwards Paper 6s, 1928-42	96	...
Ontario Pulp & Paper 6s, 1931	108½	110½
Orono Pulp & Paper 6s, 1943	99	...
Orono Pulp & Paper 5s, 1941	96½	...
Oswego Falls Corp. 6s, 1941	99	102
Parker-Young Company 6½s, 1944	98	100
Paterson Parchment Paper 6s, 1938	101	103
Penobscot Chemical Fibre 6s, 1942	102	105
Port Alfred Pulp & Paper 5½s, 1947	98	100
Price Brothers 6s, 1943	105	...
Provincial Paper 5½s, 1947	98½	...
Queen City Paper 7s, 1933	98	...
River Raisin Paper 6s, 1936	98	100
Riordan Pulp & Paper 6s, 1942	102	104
Rolland Paper 6s, 1937	99	101
St. Croix Paper Serial 5s, 1937	99	...
St. Helen Pulp & Paper 6½s, 1931	99	102
St. Maurice Valley Corp. 6s, 1945	101	104
St. Maurice Valley Corp. 5½s, 1947	98½	100½
St. Regis Paper of Canada 6s, 1931	100	101½
St. Regis Paper of Canada 6½s, 1934	100	102
Smith (Howard) Paper Mills 7s, 1941	104	106
Spanish River Pulp & Paper 6s, 1931	108	110
Stevens-Thompson Paper 6s, 1942	94	96
Taggart Brothers 6s, 1944	95	100
Tait Paper & Color Industries 6s, 1934	88	92
Ticonderoga Pulp & Paper 5s, 1930	94	...
Ticonderoga Pulp & Paper 6s, 1940	100	102
Tomahawk Kraft Paper 6s, 1938	98	...
Tomahawk Pulp Paper 7s, 1932	99	...
Tonawanda Paper 5½s, Series 1941	99	102
Union Bag & Paper Power 6s, 1932	98	100
United Wall Paper Factories 6s, 1947	96	99
Warren (S. D.) Company 6s, 1945	103	105
Watab Paper 6½s, 1942	102	...
Waterway Paper Products 6s, 1931	100	101½
Wayagamack Pulp & Paper 6s, 1951	103	105
Westfield River Paper Serial 7s, 1943	89	93
Whitmer-Parson Pulp & Lumber 8s, 1938	20	25
Whitaker Paper 7s, 1942	108	110

STOCKS	BID	ASKED
American Box Board, Pfd.	9¼	10¼
American Box Board, Com.	9¼	10¼
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P. Pfd.	65	75
Brompton Pulp & Paper, 8% Pfd.	100	...
Champion Fibre, 7% Pfd.	108	110
Diem & Wing, 7% Pfd.	92	97
Eastern Mfg. Co. 1st Pfd.	55	...
Great Northern Paper, Com.	75	78
Hammermill Paper, new 6% Pfd.	100	...
Hinde & Dauch, Com.	125	None Off.
Hinde & Dauch, 6% Pfd.	102	None Off.
Holyoke Card & Paper	160	None Off.
Marathon Paper Mills, Com.	140	...
Mengel Co., Pfd.	102	104
Midwest Box Co., 8% Pfd.	98	103
Midwest Box Co., 6% Pfd.	95	99
Louis De Jonge Co., 7% Pfd.	94	97
Oxford Papers, Com.	195	...
Oxford Paper Co., Pfd.	108	111
Penobscot Chemical Fibre, Com.	80	...
Richardson Co., Com.	170	...
Sabin Robbins Paper Co., 8% Pfd.	105	110
St. Croix Paper	155	...
St. Regis Paper Co., 7% Cum. Pfd.	105	108
Westfield River Paper Co., 1st Pfd.	Wanted	None Off
West Virginia Pulp and Paper Company	55	57
West Virginia Pulp and Paper, Pfd.	100	103
Whittaker Paper, 7% Cum. Pfd.	105	None Off

Zellerbach Paper Co. in New Building

Leland J. Doherty, manager of the Sacramento Division of the Zellerbach Paper Company, has announced the formal opening on February 16, 1929, of a new building which is located at 1213 Front street, Sacramento. This new building is of modern construction throughout, consisting of four floors and basement. The move into this modern building is done to better serve their friends and customers in the Sacramento territory. The building has been carefully planned in every detail to provide ideal working conditions for employees as well as the most effective display of various items of merchandise sold by the company.

Here are some of the features of the new building that are designed to facilitate service in every way:

General Offices: consisting of manager's office; Dispatch Station, where a private branch exchange is maintained where complaints or adjustments are made and where orders are dispatched; Credit Authorizer, available to customers and to general sales department at all times; Billing Department, of new mechanical billing and bookkeeping machine; Filing Department, efficiently arranged for ready reference to orders, invoices, correspondence, etc.

Sales Department: In the Sales Department will be found a Sample Display Room with large display tables, display racks and cabinets for convenience in showing samples of the many items of paper, paper products, stationery and notions, carried by this division.

A new service department is installed, called the Advisory Department, where will be found printed specimens of high grade work, booklets, catalogs, folders, blotters, direct by mail advertising pieces and campaigns produced by local printers in the Sacramento territory, and also, specimens produced throughout the United States on papers that are distributed by the company. A complete dummy service is offered to printers and advertisers who are planning advertising mailings. This service consists of samples and dummies of any papers furnished gratis to the customer. The catalog and sample room is maintained with up-to-the-minute records of price changes, quotations, new lines, etc.

Operating Department: The Storage Facilities of this new modern building are properly planned with bins and arranged for speed in handling orders and for the protection of stock on the shelves.

Delivery Department: consists of a loading platform in the rear of the building, avoiding confusion with incoming merchandise and the general offices. A separate country shipping department and a convenient waiting vestibule for "Will Call" customers.

Special Equipment: The new building to be occupied by the company has every modern facility for facilitating service, pneumatic dispatch tubes to all departments, signal bells, elevators, gravity chutes, dumb waiters, thermostatic furnace, electric refrigerator, iced water at all times for customers, and customers lavatory.

The floor space to be occupied in this new building is about 30,000 square feet. In the new building are kept sufficient stock to take care of the needs of the customers at all times.

General Paper Co. Increases Capital

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., January 22, 1929.—Officials of the General Paper Company of Marion, Ind., have filed papers with the secretary of state in Indianapolis increasing the capital stock of the corporation in the sum of $50,000 preferred.

For "wire" boxes—permanent Bronze side rails with diagonally inserted sections of selected Vermont rock maple, with the grain of the wood UPRIGHT.

You Need These Ten Great Advantages of Emerson End-of-Grain Suction Box Covers

1. 3 to 10 times the wear
2. Less "smoothing up"
3. Longer wire life
4. 10% power saving
5. Easy to get quickly
6. Eliminates streaking
7. Increases suction
8. Fewer "washups"
9. No grit or splinters
10. Easy to install

Try them. See for yourself what a wonderful improvement they are. Write for full information and prices.

THE EMERSON MANUFACTURING COMPANY, LAWRENCE, MASSACHUSETTS

The Emerson End-of-Grain Suction Box Cover for "felt" boxes.

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The B Quality Pulps

"HAFSLUND BEAR"
Bleached Sulphite

"FORSHAGA"
Bleached Sulphite

"HURUM SPECIAL"
Extra Strong Kraft

"BAMBLE"
Extra Strong Kraft

Fresh Monthly Shipments—No Closed Winter Season

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THE DRAPER FELTS

All kinds and styles of Felts for all kinds and styles of Papers.

Write us about your Felt problems and let us help you reduce your Felt Costs—we will call anywhere at any time.

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Woolen manufacturers since 1856

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WIRES
EASTWOOD WIRE CORPORATION, BELLEVILLE N.J. U.S.A.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, February 6, 1929.

Conditions in the local paper market during the past week were fairly satisfactory for the time of year. The various grades of paper continue in seasonal request. Prices are generally holding to Schedule. Sales forces of the leading paper organizations are anticipating a heavy spring trade and the outlook for the future is promising.

No further developments have been reported in the news print situation up to the time of writing and the public announcement of an agreement on prices for the current year is still anxiously awaited. Production in North American mills is being maintained at around 77 per cent of capacity and offerings are quite sufficient to take care of immediate requirements.

Demand for paper board is persistent and prices are somewhat firmer than of late. The fine paper market is moderately active, with quotations practically unaltered. No radical changes were reported in the coarse paper market. Wrapping paper is moving into consumption at a satisfactory pace. Prices are holding to formerly quoted levels.

Mechanical Pulp

While the demand for imported and domestic ground wood is mostly along routine lines, the mechanical pulp market is in a sound position. Inquiries for future business are fairly numerous. Prices are holding to former levels, in most instances, and there is not much talk of concessions around.

Chemical Pulp

The chemical pulp market is exhibiting a strong undertone. Sales activity is said to be gradually expanding. Imported and domestic grades of sulphite and kraft are especially firm. It is interesting to note that sales of Scandinavian and Finnish pulp for the balance of the year are ahead of the record of the preceding year.

Old Rope and Bagging

Trading in the old rope market was fairly heavy. Perhaps the feature of the week was the excellent request for No. 1 foreign manila rope. Other grades are also holding their own in good style. The bagging market continues rather quiet. While gunny was fairly active, the demand for scrap bagging was light. Prices remain unaltered.

Rags

Mill interest in the domestic rag market is improving. Cotton cuttings were in specially strong request, while mixed rags continued to exhibit a steady tone. Prices are firmer. The imported rag market was rather quiet. Just at present the demand is light, but more lively trading is anticipated in some quarters before long.

Waste Paper

The paper stock market is more buoyant than for some time past. Supplies of the lower grades are moving into consumption in excellent volume. There is a revival of interest in the book grades and ledger stock is also showing signs of greater activity. While the request for old kraft and shavings is rather light at present, there are signs of improvement in the near future.

Twine

Steadiness prevails in the twine market. Demand for the various grades is about normal for the season. With the approach of spring greater activity is anticipated shortly, in most quarters. Prices are being maintained at previously quoted levels and shading is infrequent. When discussing the future trend, dealers are mostly optimistic.

Census of Distribution

F. A. Gosnell, Chief Statistician for Distribution, of the Bureau of the Census, Washington, D. C., will speak at the luncheon of the New York Division of the Salesmen's Association of the Paper Industry, on Monday, February 11.

Mr. Gosnell will explain the purpose of the proposed Census of Distribution and the methods to be used in collecting the necessary information. The discussion following Mr. Gosnell's talk will give an opportunity for the salesman of the paper industry to advise the Bureau of the Census, through Mr. Gosnell, of the information which would be of the most value to their sales departments.

Distribution is the only important phase of industry which is not now covered by official government statistics, with much consequent guessing when sales campaigns are planned. The proposed census will close this loophole for industry and is therefore of great interest not only to salesmen, but to executives. The New York Division of the Salesmen's Association is particularly fortunate in having secured Mr. Gosnell for this talk.

West End Paper Mill To Resume

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., January 28, 1929.—The West End Paper Mill will resume operations next week after a two week's shutdown during which alterations of an extensive nature have been made to the mill equipment in conforming with the change from the manufacture of news print to light specialty and tissue paper. Everything is again in readiness for the manufacture of the new type of paper and production will be conducted on a more pretentious scale than ever before. I. M. Cathcart, who came here several weeks ago to take charge of the supervision and instruction for the new product, said that he had about severed his connections with the Industrial Process Company, of Toronto, where he was located before coming here and expected to remain here to devote his entire time in looking after the affairs of the local firm. He is an experienced man in the paper business and is meeting with considerable success in his new duties. The West End Paper Mill is one of the pioneer industries of this place.

International Pulp Co. Elects Officers

[FROM OUR REGULAR CORRESPONDENT]

GOUVENEUR, N. Y., January 28, 1929.—The International Pulp Company at the annual meeting of stockholders elected as directors for the ensuing year M. M. Belding, M. J. McCrimlisk and W. H. Stillharter, of New York; F. N. Belding, of Rockville, Conn.; William C. Geer, Frank P. McCarthy and W. D. Mahoney of Troy, N. Y.; and Michael Doyle and Kendall B. Castle, of Rochester. Officers elected by the directors are: Michael Doyle, president; William C. Geer, vice president; M. M. Belding, treasurer; S. J. McCrimlisk, secretary. John J. Wallace was named general superintendent of the plant.

GEORGE SHEVLIN AND
The TRIMBEY-SHEVLIN "Junior"

This "Junior" screens 40 tons G. W. using .065 plates using but 15 H.P. The TRIMBEY-SHEVLIN "Senior" handles 80 tons with 25 H.P.

TRIMBEY MACHINE WORKS
Glens Falls, N. Y.

Sulphur

A FIRST REQUISITE

in

Paper Making

Large Production
Ample Reserves
Prompt Deliveries
Purity 99½%

TEXAS GULF SULPHUR CO.
41 E. 42nd Street New York City
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The Paper Industry is successfully using thousands of feet of this Pipe and they find it to be the best construction for White Water, Paper Stock and Acids that can be obtained

WYCKOFF WOOD PIPE

Pressure Pipe That Never Bursts.
Built in sizes 1 inch to 48 inches.

A. Wyckoff & Son Company
1855 Elmira, N. Y., U. S. A. 1928

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Standard Methods

Oils — Paper — Water — Microphotograph
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ELECTRICAL TESTING LABORATORIES
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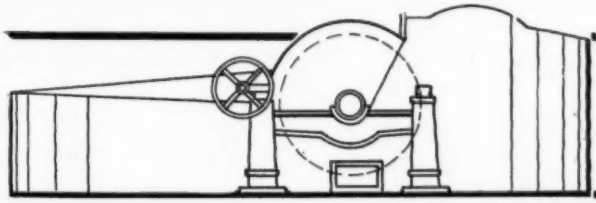

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of the PAPER and ALLIED TRADES

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Entire contents classified under separate headings for the United States and Canada, alphabetically and geographically arranged by states.
City Addresses of Mills and Mill supply Houses
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Classified List of Pulp Mill Products
Coated Paper Manufacturers
Envelope Manufacturers
Glazed and Coated Paper Manufacturers
Idle Mills
Mill Officials
Pad Manufacturers
Paper Merchants
Paper Stock and Rag Dealers
Paper Bag Manufacturers
Paper Box Manufacturers
Paper Wood Pulp and Chemical Fiber Mills of the United States, Canada, Cuba, Mexico and South America
Paper Specialties Manufacturers
Papeterie Manufactures
Etc., etc., etc.

LOCKWOOD TRADE JOURNAL CO. 10 East 39th Street - Newyork, N.Y., U.S.A.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, February 6, 1929.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Both the pulp and the powder are in seasonal request. Prices are steady. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Conditions in the bleaching powder market are fairly satisfactory. Most of the business transacted during the past week was along routine lines. Prices are holding to former levels. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—Some improvement was noticed in the casein market. Prices have been advanced on all grades. Domestic casein is quoted at from 16 cents to 16½ cents per pound, standard ground imported at 16 cents and finely ground at 16½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. Shipments against contract are moving in heavy volume. Prices remain unchanged. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is exhibiting a strong undertone. Prices are holding to previously quoted levels without difficulty. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is still selling at from $8 to $13 per ton, at mine.

CHLORINE.—Demand for chlorine is persistent. Contract shipments are going forward at a steady pace. Prices remain unaltered. Chlorine is quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on standard contracts. The spot quotation ranges from 3¼ cents to 3½ cents per pound.

ROSIN.—The rosin market fluctuated slightly. At the naval stores, the grades of gum rosin used in the paper mills are now quoted at from $9.10 to $9.45 per 280 pounds, ex dock, in barrels. Wood rosin is still selling at from $7.40 to $8.20 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Consumption of salt cake is being maintained in good volume. Inquiries for future business are numerous and the outlook is promising. Prices rule steady to firm. Salt cake is quoted at from $16 to $18 per ton, while chrome salt cake is selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—The soda ash market is in a sound position. Demand is quite up to average for the time of year. Prices are holding to schedule and shading is infrequent. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—Trading in the starch market was moderately active. Production is being maintained in sufficient demand to take care of current needs. Prices remain unchanged. Special paper making starch is quoted at $3.82 per 100 pounds, in bags, and at $3.99 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Paper mill interest in sulphate of alumina has improved. Contract shipments are moving in good volume. Prices remain unchanged. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.55 and iron free at from $1.95 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—The sulphur market is showing signs of improvement. Prices are holding to schedule. Sulphur is quoted at $18 per ton, at mine, in lots of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and nearby car loads, the quotation is $20 per ton.

TALC.—Although the talc market was only moderately active, the position of the industry is sound. Prices are holding to former levels without difficulty. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines, while imported talc is selling at from $18 to $20 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
News—		
Rolls, contract	Nominal	
Rolls, transient	Nominal	
Sheets	Nominal	
Side Runs	Nominal	
Book, Cased—		
S. & S. C.	6.00	@ 7.50
M. F.	5.75	@ 7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.35	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .80
Kraft	1.00	@ 1.10
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	4.00	@ 4.25
Southern	3.75	@ 4.00
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	37.50	@45.00
Straw	52.50	@55.00
Chip	35.00	@42.50
Binders' Boards	65.00	@67.50
Sgl. Mla. Ll. Chip	47.50	@52.50
Wood Pulp	80.00	@85.00
Container	52.50	@55.00
85 Test Jute Liner	52.50	@55.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@31.25
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.65	@ 4.40
Easy Bleaching	2.75	@ 2.90
No. 1 strong unbleached	2.50	@ 2.80
Mitscherlich unbleached	2.55	@ 3.25
No. 2 strong unbleached	2.40	@ 2.50
No. 1 Kraft	2.50	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	3.75	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.50
Mitscherlich	3.00	@ 3.25
Kraft (Domestic)	2.50	@ 3.30
Soda Bleached	3.15	@ 3.30
Sulphate Screenings—		
Coarse	.75	@ .95
Refined	1.50	@ 1.65

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.00	@11.50
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cuttings	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50

Old Rags

No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
No. 1 White Cotton	5.50	@ 6.50
No. 2 White Cotton	4.50	@ 5.50
No. 3 White Cotton	3.00	@ 4.00
No. 4 White Cotton	1.90	@ 2.15
Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.15	@ 2.30
French Blue Linens	2.65	@ 2.75
German Blue Linens	2.35	@ 2.55
German Blue Cottons	2.10	@ 2.20
Checks and Blues	1.80	@ 1.90
Lindsay Garments	1.80	@ 1.85
Dark Cottons	1.60	@ 1.65
Old Shopperies	1.50	@ 1.55
New Shopperies	1.50	@ 1.60
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.60	@ 1.70
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, heavy	1.60	@ 1.70
Bright Bagging	1.60	@ 1.65
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	3.35	@ 3.65
Domestic	3.25	@ 4.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.40	@ 2.55
Soft, White, No. 1	2.50	@ 2.60
White envelope cuttings	3.25	@ 3.50
Flat Stock—		
Stitchless	1.70	@ 1.80
Overissue Mag.	1.70	@ 1.80
Solid Flat Book	1.65	@ 1.75
Crumpled No. 1	1.15	@ 1.25
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.70	@ 1.80
New B. B. Chips	.65	@ .75
New Env. Cut	2.40	@ 2.60
Manilas—		
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.75	@ .80
Container	.60	@ .65
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.75	@ 1.85
News—		
No. 1 White News	1.70	@ 1.75
Strictly Overissue	.85	@ .95
Strictly Folded	.65	@ .70
No. 1 Mixed Paper	.45	@ .50
Common Paper	.30	@ .35

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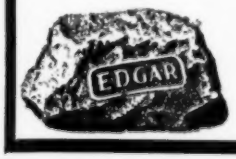

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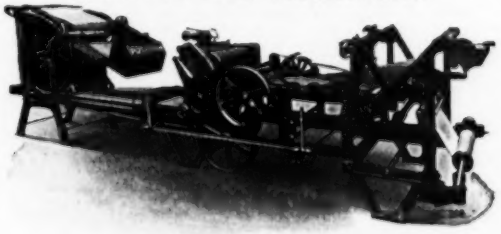

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Twines

(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine			
Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¼	@	.07¼
No. 2 S.&S.C. Book	.05¼	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¼
No. 1 Manila	.04¼	@	.05¼
No. 1 Vibre	.04¼	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	.03¾	@	.04
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton— (Delivered Central Territory)			
Plain Chip	37.50	@	41.00
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined— (Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.35	@	2.45
White Env. Cuttings	2.50	@	2.55
No. 1 Soft Shavings	2.10	@	2.15
No. 1 Mixed	1.00	@	1.05
No. 2 Mixed	.80	@	.85
Ledger & Writings	1.55	@	1.65
Solid Books	1.40	@	1.50
Blanks	1.50	@	1.65
Krafts	1.70	@	2.00
New Kraft Cuts	2.30	@	2.35
Manila Envelope Cuttings	1.75	@	1.90
Ex. No. 1 Manila	1.40	@	1.50
Print Manila	.85	@	.90
Folded News (over-issue)	.70	@	.80
Old Newspapers—			
No. 1	.75	@	.80
No. 2	.65	@	.70
Mixed Papers—			
No. 1	.65	@	.70
Roofing Stocks— (F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.10	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	.20	@	.22
Fine	.18	@	.26½
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.10	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
News	.03½	@	.04
No. 1 Jute Manila	.08½	@	.09
Manila Sul., No. 1	.04½	@	.05½
Manila No. 2	.03¾	@	.04
No. 2 Kraft	.06	@	.06½
No. 1 Kraft	.06½	@	.07
Common Bogus	.03	@	.03½
Straw Board	52.50	@	75.00
News Board	37.50	@	40.00
Chip Board	30.00	@	38.00
Wood Pulp Board (Carload Lots)	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	53.00	@	55.00
Slaters (per roll)	84	@	.94
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.44	@	1.54
Best Tarred, 3-ply	1.93	@	2.08

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	10¾	@	11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.08½	@	.09
Black Silesias, soft	.05	@	.05½
New Unbleached	.10¼	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Fancy			
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.50	@	2.60
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.85	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.45	@	1.55
No. 2 Books, light	1.20	@	1.25
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common Paper	.50	@	.55
No. 1 Mixed Paper	.65	@	.70
Straw Board, Chip	.65	@	.70
Binders Board, Chip	.65	@	.70
Overissue News	.85	@	.90
Old Newspaper	.70	@	—

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2—			
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75
Repacked	.02½	@	.02¾
No. 2	1.30	@	1.35
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.13
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05½	@	.06½
No. 2 Kraft	.03¾	@	.04½
Common Bogus	.02	@	.02¾
Delivered New England points			
Straw Boards, rolls .009	52.50		
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	47.50	@	50.00
Single White, Patent Coated Newsboard Bender	67.50	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.50	@	2.60
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.50	@	1.60
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.15	@	1.20
White Blank News	1.60	@	1.65
Old Kraft	1.85	@	1.90
Print Manila	.80	@	.90
No. 1 Mixed Paper	—	@	.50
Overissue News	.70	@	.85
Old Newspapers	.60	@	.65
Box Board, Chip	.55	@	.60

Bagging

(F. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.60
Manila Rope—			
Foreign	1.60	@	1.50
Domestic	4.00	@	—
Mixed Strings	.90	@	1.00
Jute Wool Strings	—	@	1.00
Scrap Burlaps	1.25	@	1.35
Scrap Sisal	1.60	@	1.80
Scrap Sisal for shredding	1.75	@	2.00
Wool Tares, heavy	—	@	1.50
New Burlap Cutting	1.90	@	2.00
Australian Wool Pouches	2.75	@	3.00

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09½	@	.10
Silesias, No. 1	.09	@	.09½
New Unbleached	.10	@	.10½
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03¼
New Canvas	.08	@	.08¼

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	05
Miscellaneous	.03½	@	04
Twos and Blues	2.25	@	2.35
Thirds and Blues—			
Repacked	2.00	@	2.15
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags

(F. o. b. Boston)

Dark Cottons	—	@	1.55
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.10	@	5.50
New Checks & Blues	4.25	@	4.50
Old Fustians	1.90	@	—
Old Linsey Garments	1.80	@	1.85

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	3.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

Pulp

(F. o. b. Mill)

Ground Wood	30.00	@	31.00
Sulphite easy bleaching	62.00	@	—
Sulphite news grade	62.00	@	—
Sulphite, bleached	75.00	@	—
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.70	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.11½	@	—
Fancy Shirt Cuttings	.03¼	@	—